HOW DO ORGANIZATIONS SHAPE ENTREPRENEURSHIP? EXPLAINING EMPLOYEE ENTREPRENEURS' ENTRY AND PERFORMANCE

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ABSTRACT

Tiantian Yang: How Do Organizations Shape Entrepreneurship? Explaining Employee Entrepreneurs' Entry and Performance
(Under the Direction of Howard Aldrich)

My three-essay dissertation consists of three independent chapters that examine how two major institutions, organizations and family, shape entrepreneurship in Sweden. In chapter one, I frame a contingent approach to social influence on entrepreneurship and empirically test the specifications about the contingencies. I first conceptualize entrepreneurship as a process of discovering and pursuing startup opportunities, I then theorize the conditions that amplify or reduce peer influence on entrepreneurship. In chapter two, I investigate the question of under what conditions spousal couples leave their wage jobs to become co-entrepreneurs. Whereas some spousal couples jointly create new business together, others may decide to have one person becoming an entrepreneur while the other person remaining employed in an established organization. I distinguish between competing theoretical accounts by investigating wives and husbands' transitions into entrepreneurship, taking into account their separate employment in the labor market and their joint household conditions. In chapter three, I investigate how founders and their recruited employees jointly create new businesses, contingent on the founding context of new businesses. I argue that an important dimension of developing routines and delineating boundaries is manifest in entrepreneurs' selections of employees from their local labor markets (Scott 2008). Once recruited, employees join the founders to

create new organizations and exert influences on organizations' structures and performances. Even though entrepreneurs largely follow the blueprints they learned from prior employer organizations to recruit employees, the effects of transferring routines may be contingent on the founding conditions surrounding the new businesses. Tackling these research questions requires big data on founders' employment history and their workplaces. I use a large-scale data set that are well-suited for my research questions, which are *panel data from multiple cohorts* on employer organizations and their employees in all industries in Sweden from 1989 to 2002.

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rewards for thinking independently. The hundreds of books she bought me since I was in elementary school taught me the wisdoms that have benefited me the most in my life. And my father has helped me cultivate analytical skills from the very early stage of my childhood. It has become an extremely valuable memory for me that my father and I played Chess nearly every weekend and we discussed numerous strategies that would lead to a winning game. My parents' absolute faith in my ability to succeed, coupled with their unconditional love, has provided the best encouragement for me to become a better researcher and a better person.

And lastly, in the place of honor, I want to thank Benjamin Lee for his love and his support. It was a miracle to have met Ben at a turning point of my life. I could never expect a more perfect ending of my post-graduate life than falling in love with him and joining him at Duke University to become a professor. Had it not been for his exemplary success, wisdom, and persistent encouragement, I would never have succeeded the difficult time of navigating the job market and meanwhile working relentlessly on my dissertation. His intelligence, kindness, modesty, and persistence – especially in face of adversity – have made him a better life partner that I would have ever dreamed for. He reminds me every day that our daily lives are the best inspirations for sociological research. This dissertation is dedicated to him.

PREFACE

The journey of my dissertation research started in the summer of 2010 when I visited Jönköping International Business School in Sweden. I was fortunate to have met a few excellent Swedish collaborators since then, including Karl Wennberg, Karin Hellerstedt, Carin Holmquist, Frederic Delmar, and many others. Even though I have always been interested in Sweden, I had never had a chance to study Sweden until I discovered that my Swedish collaborators had designed a research program a few years ago. The research program, "The Entrepreneurial Process: Emergence and Evolution of New Firms in the Knowledge Intensive Economy" (EPRO) project, was created by scholars at the Stockholm School of Economics using publicly available register data from Statistics Sweden. Frédéric Delmar and Karl Wennberg granted me access to use the data during my time as visiting scholar at the Stockholm School of Economics. I have followed the rules for secure data management stipulated by Statistics Sweden. Working on this project has become an extremely valuable research experience for me since I was studying a county that I did not know much about. But over time as I learned more from the literature and my collaborators, I come to realize that my dissertation may lay the groundwork for future comparative research on the United States and Nordic Countries.

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INTRODUCTION

My three-essay dissertation consists of three independent chapters that examine how two major institutions, organizations and family, shape entrepreneurship. Viewing entrepreneurs as organizational products (Freeman 1986; Stinchcombe 1965), contextual accounts of entrepreneurship have theorized work environments as one of the most important settings explaining individuals' transitions to entrepreneurship (Dobrev and Barnett 2005; Sørensen 2007; Sørensen and Fassiotto 2011). Empirical findings have shown that the vast majority of entrepreneurs discover startup opportunities at their wage jobs in established organizations (Agarwal et al. 2004; Hellmann 2007; Klepper 2001; Klepper and Sleeper 2005). In addition to work environments, family is another social context in which most new businesses are founded. In post-industrial societies where profound social changes in labor market and employment have led to dramatic increases in dual-earner couples, family households have become increasingly important in shaping entrepreneurial processes (Curtis 1986; Western et al. 2008). Thus I examine the joint effects of work environments and family households on entrepreneurial processes – entrepreneurial entry and business outcomes.

In chapter one, I frame a contingent approach to social influence on entrepreneurship and empirically test the specifications about the contingencies. I first conceptualize entrepreneurship as a process of discovering and pursuing startup opportunities, I then theorize the conditions that amplify or reduce peer influence on entrepreneurship. In studies of employee startups (employees leaving their employer firms to found new businesses), some researchers have noted the contagion of entrepreneurship among work peers, indicated by a larger likelihood

of employees' transitions into entrepreneurship when they are surrounded by more work peers with startup experiences. The central argument is that social actors in workplaces influence potential entrepreneurs' propensity to start new businesses by shaping their knowledge about startup opportunities and their attitudes about leaving their wage jobs to start new businesses (Kacperczyk 2012b; Nanda and Sørensen 2010). Preliminary results are in support of the peer-influence argument on entrepreneurship: Analyzing a sample of Danish employees at risk of entering into entrepreneurship between 1990 and 1997, Nanda and Sørensen (2010) found that employees are more likely to become entrepreneurs if their coworkers have had prior self-employment experience; Based on data on hedge fund foundings between 1979 and 2006, Kacperczyk (2012b) found that past entrepreneurial behaviors of university peers are an important driver of individual rates of entrepreneurship. Similarly, Stuart and Ding (2006) found that individual academic scientists' propensities to get involved in entrepreneurship depended on the extent to which their work settings included pro-entrepreneurship scientists. Although these studies support peer influence accounts of entrepreneurship, a deeper understanding of the mechanisms require an investigation of under what conditions former entrepreneurs affect their peers' transitions into entrepreneurship.

The two conditions crucial for the occurrence of peer influence on entrepreneurship concern knowledge of and attitudes about entrepreneurship as individuals discover and evaluate startup opportunities. First, the degree to which knowledge shared by previous entrepreneurs fosters entrepreneurial entry among their peers may depend on whether their knowledge helps identify or/and evaluate startup opportunities in the workplace context. Second, whether previous entrepreneurs' prior startup experiences encourage their peers to start new businesses may be dependent on if they help would-be entrepreneurs perceive the discovered opportunity to be

valuable. Thus I argue the industry-specific nature of knowledge about business and the biased perceptions of startup success serve as the conditions that moderate the magnitude of peer influence.

The chapter one of my dissertation offers a few implications for our understanding of entrepreneurship. First, where previous research has investigated the structural features of workplaces such as size and age, my analyses demonstrate that the percentage of employees who have pervious startup experience also explains workplaces' capability of spawning entrepreneurial activities. Established organizations are important source of entrepreneurship in capitalist societies, partially because they make it possible for individuals to move between employment and entrepreneurship and they mix together individuals with various previous experiences. Second, given that established organizations serve as a setting for the occurrence of social contagion process of entrepreneurship among employees, organizational conditions that affect employee's interaction and communication have crucial implication for the flow of information and ideas that might inspire entrepreneurial entry. Investigating such conditions requires rich information on the informal social groups within organizations and better data on the frequency of employees' interaction. Third, my finding that former entrepreneurs' previous failures do not discourage their work peers' entrepreneurial activities reveals a possible mechanism that explains the high failure rate of entrepreneurship. It seems that individuals are not learning about the low life chances of startups from others' previous failures and information about negative entrepreneurial experiences does not flow as much as positive ones. Future research may investigate whether feedback from others' negative entrepreneurial experience can be more effective for learning about how to succeed in creating new businesses.

In chapter two, I investigate the question of under what conditions spousal couples leave their wage jobs to become co-entrepreneurs. Whereas some spousal couples jointly create new business together, others may decide to have one person becoming an entrepreneur while the other person remaining employed in an established organization. Two theoretical models, one economic, the other sociological, have provided different explanations of the heterogeneity of spousal couples' joint entrepreneurial statues.

The neoclassical economic model conceptualizes entrepreneurship as a process of discovering and pursuing startup opportunities. It posits that individuals acquire knowledge know-how to discover startup opportunities, and they are more likely to exploit opportunities if they can mobilize resources needed for achieving success (Agarwal et al. 2004; Franco and Filson 2006; Hellmann 2007; Shane 2003). In the process of discovering and pursuing startup opportunities, individuals are likely to recruit others when they receive informational or material support from potential team members. An implicit assumption of the neoclassical economic model is that discoveries and pursuit of startup opportunities are gender-neutral, i.e. universalistic with regard to gender. Accordingly, a spousal couple is likely to get involved in creating new businesses together if at least one of them has discovered a startup opportunity and the other person is capable of providing resource.

However, the sociological literature suggests that the process of spousal couples' transitions to co-entrepreneurship may be gender asymmetric. The first potential gender asymmetry may stem from the gender-biased perceptions of entrepreneurial opportunities discovered by men and women. Status expectation theory posits that social beliefs about gender imply hegemonic assumptions, leading individuals to discriminate (often unconsciously and automatically) against women by discounting their competencies at highly valued skills (Berger

et al. 1980; Ridgeway et al. 1994). Accordingly, a startup opportunity discovered by a man may be perceived as more promising, and thus worth his own effort and his wife's time and resource. The second possible gender asymmetry in the process of co-entrepreneurship may be from family-embedded gender roles, male breadwinner and female homemaker roles (Brines 1994; Gorman 1999). Men and women's self-fulfillment of their gender roles affect their propensities to exit their wage jobs to join their spouses in founding new businesses. Research has shown that women's own wages are less predictive of their exits from the labor force than their husbands' (Shafer 2011), in spite of women's increased labor participation rates since the 1960s. The implication of these findings for spousal couples' co-entrepreneurship is that even when startup opportunities discovered by men and women are equally valuable, women would be less likely to recruit their husbands as co-founders than men to recruit their wives because normative expectations presume the priority of men's career choice and women's support for their husbands' careers.

I distinguish between the two competing theoretical accounts by investigating wives and husbands' transitions into entrepreneurship, taking into account their separate employment in the labor market and their joint household conditions. To develop a theoretical model, I first identify the "lead entrepreneur" and the "follower" in a spousal couple by estimating each person's propensity to entrepreneurial entry based on organizational conditions. These conditions include networks of work peers and the bureaucratic characteristics of employer organizations. I then theorize family household conditions – spousal couples' comparative wage advantage and gender expectations associated with children – that affect spousal couples' joint involvement in entrepreneurship.

My results suggest that women's chances to become entrepreneurs are constrained by their limited access to entrepreneurial peers at workplaces. Meanwhile, the differential effects of work peers on men and women's exposures to information on and skills for creating startups are substantially moderated by family conditions. Three family conditions are particularly important: men's dominance in spousal relationships, the relative comparative advantage of spousal couples' earnings, and the presence of children in the households. My results show that family-embedded gender logic interacts with gender difference in social dynamics at workplaces in shaping gender inequality in entrepreneurship.

In chapter three, I investigate how founders and their recruited employees jointly create new businesses, contingent on the founding context of new businesses. I argue that an important dimension of developing routines and delineating boundaries is manifest in entrepreneurs' selections of employees from their local labor markets (Scott 2008). Once recruited, employees join the founders to create new organizations and exert influences on organizations' structures and performances. Even though entrepreneurs largely follow the blueprints they learned from prior employer organizations to recruit employees, the effects of transferring routines may be contingent on the founding conditions surrounding the new businesses.

During organizational emergence, routines lead to recurrent patterns of actions but also evolve from stable sequences of actors' interactions (Becker 2004; Zollo and Winter 2002). The simultaneous process of developing routines for new businesses consists of two complementary stages: transferring routines from existing organizations and collectively enacting routines. At the first stage, entrepreneurs transfer routines from existing organizations to new firms (Phillips 2002). They not only carry over knowledge regarding organizational structures but also transfer knowledge about what particular kinds of employees they should recruit. At the second stage, as

new members are recruited to new businesses, routines are developed and reproduced as group members make collective efforts. Two properties of routines, one at each stage -- the incompleteness property of transferring routines and the collective nature of enacting routines -- are important for my theorizing of the conditions under which routines have positive effects on new firms.

Given the collective nature and context-dependent property of routines, the extent to which effective routines can be developed for new organizations is influenced by two conditions. The first set of conditions concerns the extent to which entrepreneurial founders recruit employees with whom they can collectively build and enact routines. From a learning perspective, routinization and implementation would be faster and easier when social actors have developed a common perspective, expectations, and approaches to problem solving from prior joint work experience (Beckman 2006). This argument leads to my first hypothesis regarding the positive effect of founders' joint or similar work experience on developing routines effective for new firms' performance. The second set of conditions concerns the extent to which members' workplaces and the new firms are under somewhat homogeneous environments (Becker 2004; Hill and Hwang 2006; Kogut and Zander 1992; Kogut and Zander 1993). Nascent entrepreneurs benefit the most when they attempt to start businesses in industries where they already have a substantial depth of experience.

The national context for my study is Sweden. Sweden has been an exemplary corporatist society that has a long tradition of adopting public policies to rectify gender-stereotyped social roles for men and women (Furåker 2005). Since the 1970s, extensive family-friendly policies were adopted in Sweden to free women's time from childcare, including extended parental leaves and government subsidies to families and day care centers (Moen 1989). However,

empirical evidence suggests that whereas there have been rapid increases in women's employment in the labor market and dual-earner household families in Sweden, substantial gender gaps exist in earnings. With regard to the labor market, most previous research describes the Swedish labor market as flexible and dynamic. The Swedish labor market is comparable to the U.S. labor market in many aspects, including the level of employment protection, and the founding rates and failure rates of organizations. A noticeable difference is that social support from the Swedish Welfare State is stronger so that a smaller percentage of individuals would be "pushed" into entrepreneurship, i.e. becoming entrepreneurs because they had no better option. Another difference between the Swedish context and the American context for entrepreneurship is that people face fewer formal barriers in Sweden to entry into entrepreneurship. For example, less than 50% of American entrepreneurs have registered with government agencies or trade associations (Yang and Aldrich 2012), but nearly all Swedish entrepreneurs have registered with government agencies the first year when they founded their new businesses (Delmar and Shane 2004; Shane and Delmar 2004).

The data I use for my analyses are taken from a database called Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA). This database has a number of features that makes it suitable for research on startups founded by people who were employees of established organizations. First, it has a wide coverage of individuals in Sweden: LISA presently holds annual registers since 1989 and includes all individuals 16 years of age and older that were registered in Sweden as of December 31 for each year. Second, LISA has rich information on labor market status, as it tracks the firm, industry, and region that an individual works in, as well as their employment status. In addition, the database has a variety of other individual characteristics that serve as important controls in studies of entrepreneurship (such as their age,

educational qualifications, annual income, wealth, marital status, and number of children). Third, LISA is longitudinal panel data that track employees from 1989 to 2002. It allows me to examine the causal mechanisms that explain the process of individuals' transitions into entrepreneurship, rather than just observing a snapshot of the phenomena or describing a correlation between entrepreneurship and explanatory factors. Finally, LISA is a matched employer-employee database, which allows me to identify which individuals work in same establishments. The matched employer-employee feature, combined with the panel data feature that track individuals' career histories, makes it possible to examine how former entrepreneurs affect their work peers' transitions into entrepreneurship.

CHAPTER ONE: WHEN DO ENTREPRENEURS LEARN FROM WORK PEERS? A CONTINGENT APPROACH TO SOCIAL INFLUENCE

The significant contrast between voluminous entrepreneurial attempts and a low likelihood of startup success has led researchers to investigate the consequences of entrepreneurial processes for organizations and individuals (Aldrich and Yang 2012; Sorensen and Sorenson 2007). Theorists have noted that entrepreneurial processes – the foundings and dissolutions of new businesses – generate new populations of organizations and ensure the reproduction of existing populations (Aldrich and Ruef 2006; Hannan and Carroll 1992). As new organizations emerge, grow, and decline, they shape the opportunity structures facing employees (Carroll et al. 1992; Mamede 2009; Stovel and Savage 2006). Foundings create new jobs, while dissolutions destroy jobs. When former entrepreneurial founders move back to established organizations, they may affect the job mobility of employees working for the organizations to which the entrepreneurs return (White 1970). Many scholars have examined how returns of entrepreneurs to established workplaces affect current employees' within-firm and between-firm job mobility (Haveman et al. 2009 ; Haveman and Cohen 1994; Stovel and Savage 2006), however, we need to know more about the mechanisms by which former entrepreneurs affect their work peers' employment-to-entrepreneurship mobility. To the extent that individuals' attitudes about startups and their propensities to undertake startup activities are affected by people who already have such experiences, entrepreneurial entry can be seen as an outcome of a social contagion process. The diffusion of social behaviors among peers has previously been investigated in sociological research (Cartwright 1965; Lippitt et al. 1952; March 1955).

Empirical evidence has shown that individuals are affected by people with whom they share a social context (Friedkin and Cook 1990; Marsden and Friedkin 1993). For example, the happiness of Americans is affected by the income of those living nearby(Firebaugh and Schroeder 2009); High-school students' college aspirations and attendance are affected by their friends (Hallinan and Williams 1990). Among the many kinds of behaviors occurring in social contexts, peer influence has found to be particularly salient in spreading behaviors that are viewed as deviant, including delinquency (Gardner and Steinberg 2005; Haynie and Osgood 2005), drug use (Kaplan et al. 1984), and health-risk behaviors (Prinstein et al. 2001). Entrepreneurship – the act of founding a new business – is often seen as somewhat deviant because it is risky and full of uncertainty, as suggested by insights from organizational sociology and organizational theory. Scholars have coined many constructs to describe the precarious life chances of new businesses, including liability of smallness (Freeman et al. 1983), liability of newness (Stinchcombe 1965) and liability of disconnectedness (Powell et al. 1996) . Entrepreneurship theories share the insight that a big challenge facing entrepreneurs is how to cope with uncertain situations (Amit et al. 1990; Palich and Bagby 1995; Simon et al. 2000). These theories jointly suggest that entrepreneurial activities may occur as a result of social contagion among peers.

In studies of employee startups (employees leaving their employer firms to found new businesses), some researchers have noted the contagion of entrepreneurship among work peers, indicated by a larger likelihood of employees' transitions into entrepreneurship when they are surrounded by more work peers with startup experiences. The central argument is that social actors in workplaces influence potential entrepreneurs' propensity to start new businesses by shaping their knowledge about startup opportunities and their attitudes about leaving their wage

jobs to start new businesses (Kacperczyk 2012b; Nanda and Sørensen 2010). Preliminary results are in support of the peer-influence argument on entrepreneurship: Analyzing a sample of Danish employees at risk of entering into entrepreneurship between 1990 and 1997, Nanda and Sørensen (2010) found that employees are more likely to become entrepreneurs if their coworkers have had prior self-employment experience; Based on data on hedge fund foundings between 1979 and 2006, Kacperczyk (2012b) found that past entrepreneurial behaviors of university peers are an important driver of individual rates of entrepreneurship. Similarly, Stuart and Ding (2006) found that individual academic scientists' propensities to get involved in entrepreneurship depended on the extent to which their work settings included pro-entrepreneurship scientists. Although these studies support peer influence accounts of entrepreneurship, a deeper understanding of the mechanisms require an investigation of under what conditions former entrepreneurs affect their peers' transitions into entrepreneurship.

The two conditions crucial for the occurrence of peer influence on entrepreneurship concern knowledge of and attitudes about entrepreneurship as individuals discover and evaluate startup opportunities. First, the degree to which knowledge shared by previous entrepreneurs fosters entrepreneurial entry among their peers may depend on whether their knowledge helps identify or/and evaluate startup opportunities in the workplace context. Human capital theory maintains that compared to explicit knowledge codified in formal procedures or written documents, tacit knowledge -- know-how or the noncodified components of an activity -- is particularly useful for discovering (hidden) opportunities (Becker 1975; Polanyi 1966). But tacit knowledge about business is difficult to obtain and more specific with regard to the business setting. Research on entrepreneurship has suggested that tacit knowledge about new businesses is highly industry-specific (Agarwal et al. 2004), and is often cultivated via personal experience

and practical learning (Davidsson and Honig 2003; Polanyi 1966). Thus, former entrepreneurs would be more likely to contribute to the accumulation of their work peers' tacit knowledge if they have had startup experience in relevant industries.

Second, whether previous entrepreneurs' prior startup experiences encourage their peers to start new businesses may be dependent on if they help would-be entrepreneurs perceive the discovered opportunity to be valuable. Entrepreneurship scholars have argued that individuals are more willing to bear this risk and exploit opportunities when they (1) frame information more positively (Palich and Bagby 1995), or/and (2) perceive higher chances of success (Cooper et al. 1988). Because most startups fail, it is implausible that every entrepreneur's experience would encourage others to do the same. Two conditions might affect the influence of former entrepreneurs on their peers: First, the extent to which their startup experience was positive; Second, individuals' perceptions of others' startup experiences. Previous research has found systematic differences between entrepreneurs and non-entrepreneurs, such as mangers of existing firms (Amit et al. 1990; Busenitz and Barney 1997). It shows that entrepreneurs are more likely than others to underestimate the risks, and even when the perceived risks are the same, they tend to overestimate the likelihood that their favored outcomes will occur (Forbes 2005; Zacharakis and Shepherd 2001). Opportunity perception- based explanations also suggested that entrepreneurs are more sensitive to successful events than to failures (Tversky and Kahneman 1974). Thus an in-depth inquiry of peer influence on entrepreneurship needs to unpack how former entrepreneurs' previous experiences affect their work peers' perceptions of opportunity cost of pursuing startup activities.

In my study, I frame a contingent approach to social influence on entrepreneurship and empirically test the specifications about the contingencies. Building on previous studies, I

synthesize an entrepreneurial learning perspective and social influence theory to develop hypotheses. The empirical context for my analysis is the knowledge-intensive industries in Sweden. I conclude the paper by summarizing the key results and discuss implications from my study.

THEORIES AND HYPOTHESES: A CONTINGENT APPROACH TO PEER INFLUENCE

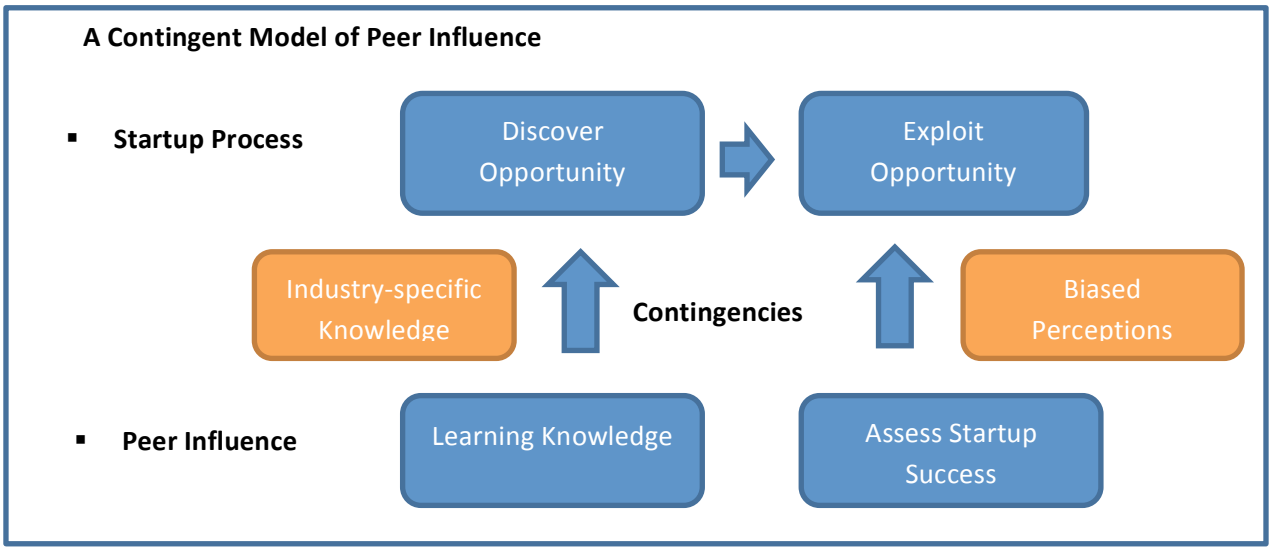
Entrepreneurs are organizational products (Freeman 1986; Stinchcombe 1965). Contextual accounts of entrepreneurship have theorized work environments as one of the most important settings explaining individuals' transitions to entrepreneurship (Dobrev and Barnett 2005; Sørensen 2007; Sørensen and Fassiotto 2011). An agency perspective, developed by research on high-tech spinouts, emphasizes incumbents as technological environments in which potential employee entrepreneurs acquire technological know-how to discover startup opportunities (Agarwal et al. 2004; Franco and Filson 2006; Hellmann 2007). A learning or knowledge-based perspective posits that practical learning that takes place on the job is the key to employees' access to knowledge about the industry and entrepreneurial opportunities (Elfenbein et al. 2010; Kacperczyk 2012a; Sørensen 2007). Consistent empirical findings have shown that the vast majority of entrepreneurs discover startup opportunities at their wage jobs in established organizations. For example, Cooper et al. (1989) found that 58% of the ventures founders viewed their prior jobs as the sources of their business ideas. Similarly, Bhide (1994; 2000) found that about 70% of the founders he surveyed replicated or modified startup ideas that they encountered at previous jobs. Furthermore, research on spinouts also suggested that individuals working for existing organizations are more likely to recognize information about startup opportunities (Agarwal et al. 2004; Hellmann 2007; Klepper 2001; Klepper and Sleeper 2005). Once opportunities are discovered, perspective entrepreneurs are more likely to exploit

opportunities if they can mobilize resources needed for achieving success (Cooper et al. 1989) . In sum, if knowledge and resources are central ingredients to create new businesses, work environments serve as the context in which prospective entrepreneurs assemble all the ingredients.

Workplace effects on entrepreneurship are a growing concern in the literature, and the role that work peers play in fostering startup activities by employees has received scholarly attention. Following Marsden and Friedkin (1993), I define social influence as the alteration of an actor's behaviors attitudes as results of other actors with whom the focal actor shares a social context. The general hypothesis of social influence theory is that the occurrence of interpersonal influence between the actors leads to similar behaviors among peers (Cartwright 1965; Simon 1957). In a situation involving ambiguity, people obtain normative guidance by comparing their attitudes with those of a reference group (Erickson 1988). "Attitudes are confirmed and reinforced when they are shared with the comparison group but alter when they are discrepant." Applied in the context of entrepreneurship, the peer influence argument highlights the role of interpersonal influence among work peers on employees' propensities to found new businesses (Ibarra and Andrews 1993; Stuart and Ding 2006).

I theorize peer influence on entrepreneurship within the framework that conceptualizes entrepreneurship as a process of discovering and pursuing startup opportunities. Thus my approach examines how previous startup experience by work peers affects employees' discoveries and exploitation of opportunities. As depicted in the figure below, work peers' startup knowledge helps the focal individuals discover startup opportunities and their previous startup experience also shapes the focal individuals' assessment of their opportunity costs of pursuing startup opportunities. The industry-specific nature of knowledge about business and the

biased perceptions of startup success serve as the conditions that moderate the magnitude of peer influence. In the section below, I draw on entrepreneurial learning perspective and social influence theory to explain these contingencies and develop relevant hypotheses.



Peer Influence Mechanisms at the Stage of Discovering Startup Opportunities

The degree to which knowledge shared by previous entrepreneurs increases their peers' startup activities may depend on whether their knowledge helps identify or/and evaluate startup opportunities in the workplace context. Research on entrepreneurship has suggested that tacit knowledge --- that is particularly helpful to build the problem-solving "repertoire" of entrepreneurs -- is highly industry-specific (Agarwal et al. 2004). Thus, the contagion process of entrepreneurship among work peers is contingent on the mechanisms that govern the relationship between former entrepreneurs' industry-specific knowledge and the sorting of their work peers into industries where they create new businesses.

Research studying employee startups suggests that employees working for incumbent firms are more likely to become entrepreneurs in the same industry because their career histories constrain the business know-how they obtain (Audia and Rider 2005; Klepper 2001; Klepper and Sleeper 2005). A knowledge-based perspective posits that an individual's fitness or suitability

for becoming an entrepreneur is dependent on his/her knowledge learned from existing jobs (Jovanovic 1979). Because current employment is more likely to provide employees with technical and market knowledge about the incumbent firm, employees of incumbent firms will find themselves more suited for creating new businesses in the same industry (Chatterji et al. 2013; Gompers et al. 2005). A genealogical approach of knowledge transfer also argues that knowledge inherited from established organizations would be most useful if employees start new businesses in the same industry (Phillips 2002). Accordingly, many scholars have anticipated that founders departing existing organizations constitute a significant proportion of the entrants (Stuart and Sorenson 2005). Among technology-based industries, empirical evidence consistent with this expectation has been found in automobiles (Klepper 2002), biotechnology (Stuart and Sorenson 2003a), microelectronics, and telecommunications. If individuals' preferences for industries where they want to create new businesses are primarily shaped by their work experience, their own match of skills and the preferred industry, their propensity to start new businesses would only be amplified by their coworkers who had created startups in that specific industry. According to this argument, a strong correlation does not necessarily exist between the full range of industries where coworkers have created startups and the industries where the focal employees create startups. Instead, employees' likelihood of becoming entrepreneurs would only be significantly affected by the share of coworkers having prior startup experience in the same industries.

An alternative argument is that knowledge about industries constitutes major components that former entrepreneurs share with their work peers. It assumes fewer constraints the current employment imposes on individuals' learning opportunities and their preferences for industries. Compared to the argument made earlier, this alternative argument suggests a stronger

form of peer influence that includes shaping preferences for industries. According to this argument, I would observe a strong correlation between the industries where coworkers have created startups and the industries where the focal employees create startups. Thus, I propose and will test both the weaker form of peer influence and the stronger form of peer influence on entrepreneurial entry:

H1. Weaker form of peer influence: Individual rates of entrepreneurship will be higher when a greater share of coworkers in work environments has prior entrepreneurial experiences in the same industry of the work environments.

H2. Stronger form of peer influence: Individual rates of entrepreneurship will be higher in an industry where a greater share of coworkers in the work environments has prior entrepreneurial experiences in that specific industry where entrepreneurs choose to start their new businesses.

Peer Influence Mechanisms at the Stage of Evaluating Startup Opportunities

Knowledge of the business alone, however, may not motivate an individual to pursue an entrepreneurial opportunity. Prospective entrepreneurs must also have a positive assessment of their chances to succeed in order to take actions to become entrepreneurs (Bandura 1986; Hackett 1995). Decision making regarding exploiting a startup opportunity involves weighing the value of the opportunity against the costs of forgoing alternative opportunities. An entrepreneurial entry is more likely to happen when the opportunity cost of launching a startup is lower (Amit et al. 1995). Entrepreneurship scholars have argued that individuals are more willing to bear this risk and exploit opportunities when they (1) frame information more positively (Palich and Bagby 1995), or/and (2) perceive higher chances of success (Cooper et al. 1988). Thus, in this section, I propose my hypotheses based on the mechanisms that govern the

flow of information on peers' entrepreneurial experience and the mechanisms that shape prospective entrepreneurs' perceptions of the information.

Biased flow of information

The extent to which employees learn about their peers' previous startup experience and obtain knowledge from them is dependent on the flow of information at workplaces. In her classic study, The Search for an Abortionist, Nancy Lee (1969) found that information about abortion services was surprisingly dispersed widely at the time when abortion was illegal. She argued that because of the unusual nature of the information, women were able to find abortionists even though these doctors were rare and they could not advertise their services. Her study suggested a biased flow of information among peers. A similar mechanism may also apply to the flow of information on entrepreneurship.

An important component of information on entrepreneurship is about a business' outcome and/or the benefits for entrepreneurs. If information on peers' positive entrepreneurial experiences spreads more widely than their negative experiences, the biased information flow may lead to systematic mistakes in prospective entrepreneurs' evaluation of the attractiveness of the market and their chance to succeed. The widely celebrated success of entrepreneurship may encourage individuals who have more positive prior startup experience to share with others their stories (Aldrich and Yang 2012). This reasoning is consistent with the argument that knowledge is more likely to be shared if it is perceived to be useful for indirect learning (Argote 1999). Previous entrepreneurial founders may find their experiences valuable for their work peers and are more willing to share their knowledge. Furthermore, such positive information is also more likely to be repeated or paraphrased among peers during formal and informal conversations. For example, an individual knowing of his peer's previous startup success may talk to a co-worker

about the fortune that his peer has made from the startup. People may sense that they are expected to tell encouraging stories when talking to individuals who are interested in creating new businesses. Furthermore, in countries where the welfare states provide a safety net to individuals, failed experience outside of normal wage jobs is likely to be associated with shame and thus unlikely to be brought up in conversations (Jenkins et al. 2014; Wigren 2003). In other words, information about startup success may be more contagious than information about startup failure among work peers. This selective mechanism of information flow would lead to individuals' greater exposure to their work peers' positive prior experience than to their negative prior experience.

Biased perceptions of information

In addition to biased flow of knowledge, biased interpretations of information may also lead to systematic mistakes in prospective entrepreneurs' evaluation of their future success. Conventional models of the entrepreneurial process view entrepreneurs as rational decision makers and assume that they weigh the probability of startup success against the loss of leaving their wage jobs (Wiggins 1995). Such reasoning suggests that entrepreneurs willingly accept risks when the opportunity cost of pursuing startup opportunities is lower (Amit et al. 1990; Amit et al. 1995). Alternatively, others suggest that people are more likely to take risks when they perceive better chances of success and lower risks (Cooper et al. 1988; Kahneman and Lovallo 1993). According to the alternative explanations, conditions under which evaluations of the opportunity cost occur may affect individuals' probability of launching new businesses. Although individuals make rational calculations about the returns to their new businesses, their calculations depend on a subjective assessment of the local market and their individual chances

of success. As Sørensen and Sorenson (2003) commented, such a subjective assessment may be susceptible to psychological biases.

Optimistic overconfidence biases prospective entrepreneurs' assessment of their chances of success, given what they learn about their work peers' previous startup experiences. Studies from cognitive science define optimistic overconfidence bias as a tendency to overestimate the likelihood that one's favored outcome will occur (Kahneman and Lovallo 1993; Tversky and Kahneman 1974). Such biases are particularly likely in situations where future outcomes are uncertain or ambiguous. Research on entrepreneurship has shown that individuals are more likely to become entrepreneurs if they are more susceptible to optimistic overconfidence bias (Forbes 2005). For example, Palich and Bagby (1995) found that entrepreneurs were more likely to categorize business situations positively than were managers of existing firms. Busenitz and Barney (1997) found that entrepreneurs exhibit a greater reliance on the overconfidence bias than did ordinary managers.

Work peers with successful startup experience contribute to prospective entrepreneurs' over-confidence via two mechanisms. First, individuals may overestimate their probability of success when they learn that their peers have successfully founded new businesses before. Viewing entrepreneurial peers as role models, individuals may over react to successful foundings by thinking "If they can do it, I can do it too." (Sorenson and Audia 2000: 443) By overestimating chances of successes, prospective entrepreneurs may fail to notice the failed experiences that other peers have. In studying foundings in the television broadcasting industry, Sørensen and Sorenson (2003) suggested that nascent entrepreneurs seem far more sensitive to successful entries than to the failure of existing firms, even though they both provide information on attractiveness of the market (Tversky and Kahneman 1974). Second, aggregated information

on multiple peers' successful prior startup experiences leads individuals to believe that they are making a wise decision because they are collecting more information (Zacharakis and Shepherd 2001). In other words, an inference made based on a large number clouds individuals' cognitive thinking and makes them believe that their decisions about entrepreneurial entry are well informed. The second mechanism suggests that when a greater share of coworkers has successful prior entrepreneurial experiences, individuals tend to believe that their decisions to become entrepreneurs are based on sound reasoning, in spite of their acknowledgement of others' failed experience. Given the arguments above, I propose that:

H3. Sensitivity to successes: Individual rates of entrepreneurship will be higher when a greater share of coworkers in work environments has successful prior entrepreneurial experiences.

H4. Insensitivity to failures: Unsuccessful prior entrepreneurial experiences by coworkers in work environment do not reduce individual rates of entrepreneurship.

METHOD

Data

The data I use for my analyses are taken from a database called Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA). This database has a number of features that makes it suitable for research on entrepreneurial entry. First, it has a wide coverage of individuals in Sweden: LISA presently holds annual registers since 1989 and includes all individuals 16 years of age and older that were registered in Sweden as of December 31 for each year.

Second, LISA has rich information on labor market status, as it tracks the firm, industry, and region that an individual works in, as well as their employment status. In addition, the database has a variety of other individual characteristics that serve as important controls in

studies of entrepreneurship (such as their age, educational qualifications, annual income, wealth, marital status, and number of children).

Third, LISA is longitudinal panel data that track employees from 1989 to 2002. It allows me to examine the causal mechanisms that explain the process of individuals' transitions into entrepreneurship, rather than just observing a snapshot of the phenomena or describing a correlation between entrepreneurship and explanatory factors.

Finally, LISA is a matched employer-employee database, which allows me to identify which individuals work in same establishments. The matched employer-employee feature, combined with the panel data feature that track individuals' career histories, makes it possible to examine how former entrepreneurs affect their work peers' transitions into entrepreneurship.

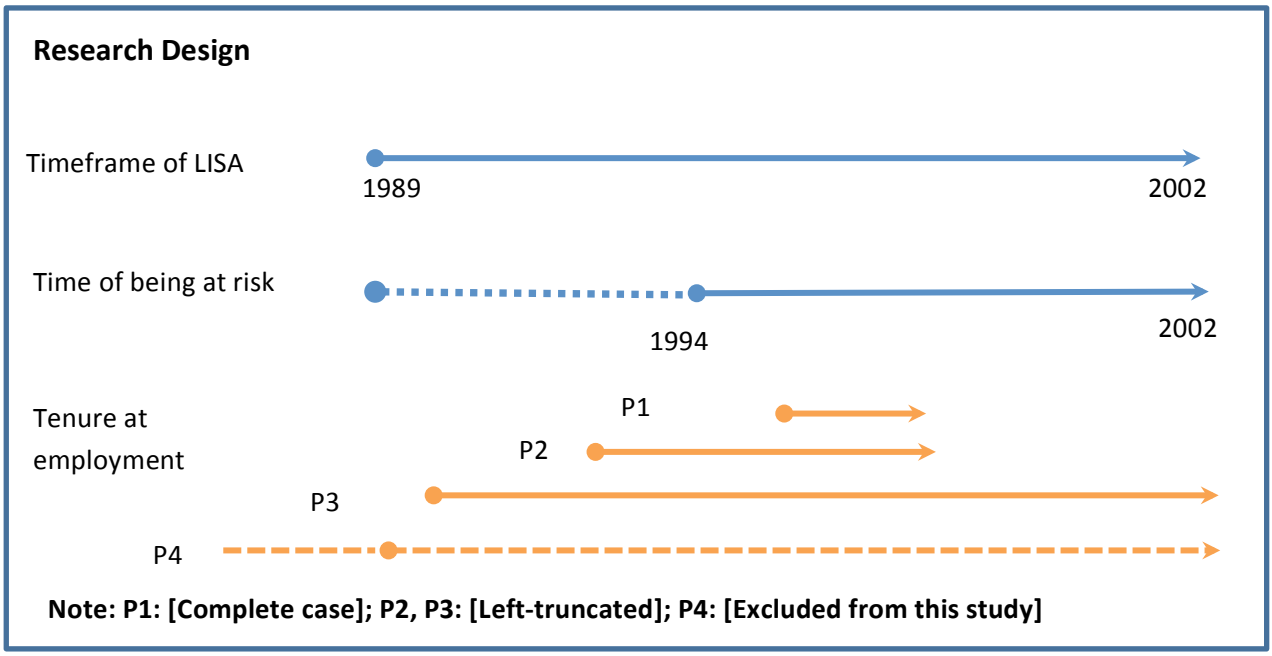
Sample

I construct the sample for my analysis based on LISA. The research design for my study must allow for an observation of individual career histories prior to current employment in established organizations, and an observation of (some) employees' transitions into entrepreneurship. With regard to the observation of prior career histories, the earliest possible year is 1989. With regard to the observation of the event of interest (an employee's probability of transitioning from current employment to entrepreneurship), the initial time of being at risk should be the first year when an individual is newly hired by an employer. Because I want to trace employees back five years from the current employment, I choose 1994 as the earliest possible initial year of being at risk for occurrence of entrepreneurship. Because I want to follow employees for long enough to reduce right-censoring, I choose 1997 as the latest possible initial year of being at risk for occurrence of entrepreneurship. These decisions lead to a sample of 4

cohorts of employees (1994 or before, 1995, 1996, and 1997) who are at risk of entering into entrepreneurship between 1994 and 2002.

However, not every employee started their current employment in 1994. Some started prior to 1994 and others started after 1994.If a firm is created in 1989 or before, I won't be able to identify the first year when an individual was hired. If a firm is created in a year between 1990 and 2002, the first year of employment is identifiable for individuals hired before the end of the observation, the year of 2002. Because I choose 1994 as the earliest possible initial year of being at risk for occurrence of entrepreneurship, the data are left-truncated when they include individuals for whom the observation period starts after the first year of employment in a firm. These individuals are employees hired by firms founded in 1989 or before (presumably these firms were founded in 1989 to before). Some researchers have taken a more conservative approach to handle left-truncation by only including individuals who started their jobs in the first year of their observation period. For example, Nanda and Sorensen (2010) limited the sample to individuals who were newly hired with their employer in 1990 and 1990 is the first year of the observation. Given the descriptive result shown in table 1 in Appendix 1, the percentage of employees started their jobs in 1994 is 4.8%, 5.7%, 7.1%, 7.6% 13.5%, and 35.3% for firms founded in 1989, 1990, 1991, 1992, 1993 and 1994, respectively. Only including people who were newly hired in a given year would lead to a very restricted sample. Because knowing the initial time of being at risk of entering into entrepreneurship allows me to control for left-truncation, I choose a more inclusive sample by including employees whose first year of employment is from 1990 onwards. Among the 9,998,235 individuals of the original sample, only 3% would be excluded from the final sample for my analysis.

The figure below describes the research design of this study.



The unit of workplace for my study is an establishment rather than an organization because the distribution of firm size is highly left skewed and large firms usually have establishments at multiple locations. Because peer influence likely happens when individuals are physically located in same place, an establishment is a more appropriate unit than a firm. Among establishments, I restricted the final sample to only include establishments that have less than 50 employees in their founding year, and I treat employees as right censored when their establishments grow larger and hire more than 100 employees. I excluded large establishments, about 10% of establishments in the sample, from my analysis because previous research has shown that small firms are more likely to spawn entrepreneurship (Elfenbein et al. 2010; Sørensen 2007). So the sample of small workplaces is a relevant sample for my analysis on entrepreneurial entry. Furthermore, because the data do not directly identify how frequently the focal individual comes into contact with a particular coworker in the workplace, restricting

establishments to small ones makes it plausible that individuals in small establishments have interaction with each other.

Dependent Variable

I follow previous research using similar datasets to measure transitions to entrepreneurship relying on a work status classification scheme that differentiates a variety of labor force attachments: (1) employment with established organizations, (2) unemployment, (3) not in the labor force, and (4) self-employment. Statistics Sweden recognizes both unincorporated self-employment and incorporated self-employment.[1] Founders of incorporated ventures appeared as employees whereas the incorporated ventures appeared as employers. However, I treated individuals who were founders of incorporated ventures as entrepreneurs, self-employed in incorporated firms. Furthermore, following Sørensen (2007), I define entrepreneurs based on the size of employees in the founding year of a new business and a direct transition from employment to entrepreneurship. First, I assume that individuals who are self-employed in newly founded firms are entrepreneurs. Second, if an individual becomes unemployed between employment in one year and self-employment in the next, I do not identify it as transition from employment into entrepreneurship. Unlike Nanda and Sørensen (2010) treating employees working for new firms that have less than 3 employees as entrepreneurs, I only define self-employed people as entrepreneurs because the jobs that employees have in newly founded small firms are still wage jobs, which are fundamentally different than founding one's own new business.

Independent Variables

[1] The data is based both on the statement of income to be provided to tax authorities for all persons who received remuneration or other benefits from employers and the data on declared income of active trade.

Prior entrepreneurial experience of the focal individual's Coworkers: is measured by two indicators. (1) To construct the first indicator, I first identify the number of years each of the focal individual's colleagues had been self-employed in the preceding five years. As Nanda and Sørensen (2010) have argued, "the choice of a five-year window is somewhat arbitrary, but reflects an assumption that the impact of entrepreneurial experience declines with time." I then calculate the average number of years (of the previous five years) the focal individual's peers were entrepreneurs. (2) The alternative indicator is the number of the focal individual's colleagues who had ever been self-employed in the preceding five years. Whereas the first indicator emphasizes the extent of entrepreneurial experience that co-workers had in the past five years, the alternative measure emphasizes the intensity of peer network ties with prior entrepreneurial experience.

Industry-specific experience: The data include 5-digit industry codes. I code the variable -- the number of years each of the focal individual's colleagues had been self-employed in the preceding five years for each 5 digit industry code.

Similarity of industry: this variable is coded based on the 5-digit SIC industry code. There are three industries of my interest: the industry where a former entrepreneur created his/her startup, the industry where the current workplace is established, and the industry where an employee starts his/her new business. I examine the similarity of any pair of the three industries, which is measured by an ordinal variable ranged from 0 to 5, indicating whether the two businesses are in same industry in the 1st, 1-2, 1-3, 1-4, or 1-5 industry code. For example, the extent of similarity of the two industry codes, 50202 and 50203 (50202 Bodywork repair, painting and glazing of motor vehicles, 50203 Installation and repair of electrical motor vehicle

equipment) would be 4; and the extent of similarity of the two industry codes 50202 and 50301 (Wholesale of motor vehicle parts and accessories) would be 2.

Indicators of a startup outcome for a former entrepreneur prior to current employment: First: Z score of entrepreneurial income in the same industry and region: is the number of standard deviations an entrepreneur's personal income is *above* or below the average income of entrepreneurs in the same industry and same region. It indicates the relative personal achievement of an entrepreneur compared to the reference group: other entrepreneurs in the same industry and region. Presumably, an entrepreneur would have a more positive startup experience if he/she had more income from his/her startup compared to other entrepreneurs. This measure controls for region and industry because entrepreneurial income is highly dependent on industry and region so controlling for the two factors can reduce heterogeneity; The unit of an industry is a 5-digit level, and the unit of a region is a county. I choose a county instead of a municipality as the unit for a region because Swedish municipalities are very small. Sweden has 290 municipalities. The average population of a municipality is 31,930, and the median population is 15,257, the average population density (people/km^2) is 132, and the median density is only 26. Given that roughly 60% of Swedish population is in the labor force, [2] and 3.5% of the labor force is involved in entrepreneurship, [3] the number of entrepreneurship in an industry at 5-digit industry code level would be extremely small. So county is a more reasonable regional unit for my analysis. Sweden has 21 counties. The average population size of a Swedish county is 450,634, and the average density of population is 46. Defining a county as the region and a 5-digit industry code as the industry, the average number of entrepreneurs in each industry-region

[2] http://www.bls.gov/fls/country/sweden.htm

[3] http://www.gemconsortium.org/docs/download/2409

is 26, and the median is 5. Second, an alternative indicator is the ratio of a former entrepreneur's current wage salary to his/her income from his/her new business in the year where he/she leaves the new business. I assume that a former entrepreneur has a more positive experience if he/she had more income from his/her startup than the current wage job. Both of the two indicators affect former entrepreneurs' perceptions of their previous startup experience and thus influence the way they shape work peers' potential entrepreneurial activities.

Control variables

Individual level control variables:

The data have two measures for education that can be converted to each other: First, the level of education: Six levels: (1) Compulsory schooling less than 9 years; (2) Compulsory schooling nine years (equivalent); (3) Secondary education; (4) Post-secondary education less than two years; (5) Post-secondary education two years or longer; (6) Graduate program. Second: years of education. Statistical Sweden and Swedish Council for Higher Education calculated years of education for each education code, which consists of information on the level of education and the type of education. I use years of education because it is more fine-grained measure than the level of education.

Severn other individual-level control variables are (1) age and age squared; (2) whether an individual received the highest degree in a university in Stockholm; (3) days of unemployment in a year; (4) gender; (5) whether an individual has created business before (a serial entrepreneur); (6) individual wage income; (7) fixed effects for the year when an employee was hired by the current employment.

Firm-level control variables: the natural logarithm of the number of employees, average salaries of employees, the percentage of female employees; whether a firm has any currently self-employed people; the year when a firm was founded; County fixed effects.

Analytical Strategy

I use proportional hazard model to test hypotheses. The hazard rate of interest is the instantaneous rate of transitioning into entrepreneurship, or conditional transition rate, written as:

$$\lambda(t) = \lim_{\Delta t \to 0} \frac{p(t \le T < t+\Delta t | T \ge t)}{\Delta t} = \lim_{\Delta t \to 0} \frac{\frac{p(t \le T < t+\Delta t,\ T \ge t)}{\Delta t}}{P[T \ge t]} = \lim_{\Delta t \to 0} \frac{\frac{p(t \le T < t+\Delta t)}{\Delta t}}{P[T \ge t]} = \frac{f(t)}{S(t)}$$

The formula indicates that the hazard rate is the ratio of the probability density function to the survival function, meaning the approximate probability that an employee becomes an entrepreneur between the time interval [t, t $+\Delta t$], conditional on its probability of staying on the wage job to time t.

In my analysis, I am aware of potential methodological problems related to research design and data collection that may bias model estimation: left-truncation and right-censoring. Both left-truncation and right-censoring lead to incomplete panel data (Guo 1993). Left truncation occurs when employees had already been exposed to the risk of transitioning into entrepreneurship for a certain period (depending on when they started) when they came under the observation. In other words, a time lag exists between the initial year of employment and the beginning point of our observation. To formally define left truncation, let T_i be a continuous variable representing the duration time that a subject of interest has been exposed to the risk of an event, t_i be the observed duration time that a subject of interest has been exposed to the risk of an event, and u_i be the duration time that a subject of interest has been exposed to the risk of an event at the sample selection time. To be eligible for a prospective study which intends to

observe the occurrence of the event, we require that subjects are at risk of exposure to the event at the time of selection and thus we have $t_i \geq u_i$ and $u_i > 0$. For a subject which has been exposed to the risk and is currently eligible for the study, its duration time T_i is left truncated at the sample selection time u_i. Whereas the original hazard function is $\Pr(T_i = t_i \mid T_i > t_i)$ where $t_i > 0$, the hazard function for a left-truncated T_i is

$\Pr(T_i = t_i \mid T_i > t_i, T_i \geq u_i) = \Pr(T_i = t_i \mid T_i > t_i)$ where $t_i \geq u_i$ (Lawless 2003: 67).

With left-truncated data, if the start time of being at risk is unknown, we face the problem of a biased estimation of the hazard of failure because the full length of exposure to risk is unknown. However, if we know the actual start time of exposure to the risk of encountering an event, we can handle left truncation with the Conditional Likelihood Approach (Allison 2010; Guo 1993; Yang and Aldrich 2012). In my sample, only 3% of employees hired by firms founded from 1994 to 1997 have an unidentifiable first year of employment.

RESULTS

In this section, I first report the descriptive results for employees' transitions into entrepreneurs and the characteristics of their employer organizations. I then test hypotheses using hazard models.

Descriptive Results

The descriptive results in Table 1 show that the percentage of employees who transition into entrepreneurship is about 4%, similar with previous findings on entrepreneurial entry in other Nordic countries (Nanda and Sørensen 2010). The numbers are relatively smaller for employees who were newly hired in 1996 and 1997 than those in earlier years, partially because of the shorter observation periods. I also examined the rate of transition into entrepreneurship

given the year when an employee was newly hired at an establishment. Results in Figure 1 show that employees are less likely to become entrepreneurs as their job tenure increases at workplaces.

The bivariate relationships between the startup experiences of workplace peers and the individual rate of entry into entrepreneurship provide preliminary support for the effect of peer influence. As shown in Figure 2, compared to employees who do not have colleagues with prior startup experience, those who do are substantially more likely to become entrepreneurs. The relationship between entrepreneurial exposure and entry rates becomes weaker as workplace size increases. In small establishments, the presence of entrepreneurial peers increases a focal employees' entry rate by more than one third, whereas the effect of entrepreneurial peers is fairly small in large establishments (more than 30 employees).

The smaller effect of entrepreneurial peers' effect on employees' transitions to entrepreneurship may be dependent on the size of entrepreneurial peers at establishments. Thus, I reported the number of employees who have prior startup experience given firm size. Taking 1994 as an example (Figure 3), the number of entrepreneurial peers does not increase proportionally with the number of employees hired by an establishment. When an establishment only has 4 or less employees, on average about one of them has prior startup experience. When an establishment has more than 10 employees, the average number of employees who have prior startup experience is between 1.5 and 2. This may partially explain why peer influence on entrepreneurial entry is smaller in large firms: the influence of entrepreneurial peers is diluted as the number of employees increases at establishments.

Among establishments that do have some work peers having prior startup experience, most establishments (94%) have 1 employees having prior self-employed experience in the past five years. And then another 4 % have 2 former entrepreneurs. Less than 1% establishments have

more than 3 former entrepreneurs. Because there are so few former entrepreneurs in each firm, I will identify the 5-digit industry for each former entrepreneur, and see whether peer influence is dependent on the similarity of the former startup industry and a new entry's industry. When there are multiple former entrepreneurs, some of them might have created startups in the same industries. In my sample (restricted sample given many criteria), because 99.75% firms have former entrepreneurs from less than 4 different industries, I focus on the three industries where most former entrepreneurs have created their businesses. For example, if the number of former entrepreneurs is 10, 8, 6, 5, 4, 3, 1 in industry A, B, C, D, E, F, I would only code industry A, B, C, because the industries where more former entrepreneurs located their startups supposedly have larger effects on current employees' choices for their entrepreneurial activity.

As shown in the Figure 4, the similarity of former entrepreneur's industry and current employer organization's industry shows a bimodal distribution, so as the similarity of new startup's industry and the current employer organization's industry. Among former entrepreneurs who are currently employed in established organizations, 50% have started new businesses in industries that are completely different than their current employer organizations' industry, where 30% have started new businesses in the exact same industry of their current employer organizations. Among employees who transitioned into entrepreneurship, 46% enter into a completely different industry, whereas 35% create spinouts, startups in the exact same industry.

To examine how former entrepreneurs' specific-industry startup experience affects their work peers' choices of industries for creating new businesses, I reported a cross-tab of the two similarity variables in figure 5: X variable is the similarity of new startup's industry and the current employer organization's industry, and Y variable is the similarity of former entrepreneur's industry and current employer organization's industry. The large values on the

dialog suggest that employees are more likely to create new businesses in their employer organizations' industries when their work peers had startup experience in the same industry. Meanwhile, employees are more likely to create new businesses in different industries when their work peers had startup experience in different industries. This matrix supports the strong peer influence mechanism that an employee is more likely to start a new business in an industry where his/her coworker started a new business.

The two Indicators of a startup outcome for a former entrepreneur are Z score of entrepreneurial income in the same industry and county, and the ratio of a former entrepreneur's current wage salary to his/her income from his/her new business in the year where he/she leaves the new business. Both of the two indicators affect former entrepreneurs' perceptions of their previous startup experience and thus influence the way they shape work peers' potential entrepreneurial activities. I show the distributions of the two indicators for similar-industry former entrepreneurs and different-industry former entrepreneurs in Table 2. With regard to the ratio of wage income to income from previous startups, about 50% of employees with prior startup experience make similar or less money from current wage jobs. About 10% of employees with prior startup experience in similar industry of their current workplaces make wage salaries at least 3 times as much as their previous entrepreneurial income, whereas 10% of employees with prior startup experience in different industries of their current workplaces make wage salaries at least 7 times as much as their previous entrepreneurial income. I suspect that entrepreneurs who make less income from their startups are more likely to switch to other industries when they look for wage jobs. Regarding Z score of entrepreneurial income in the same industry and county, the larger the Z value, the higher ranked a former entrepreneur's income in the same county and industry. Whereas the median of the Z score for former

entrepreneurs who started new businesses similar with the establishment is 0.32, the median of the Z score is -0.29 for those who started new businesses in different industries. In addition to median, other percentiles are also much smaller for employees with prior startup experience in different industries than the ones with prior experience in same industries of the current workplaces. Consistent with the first indicator, the second indicator of former entrepreneurs' performance outcomes suggests that entrepreneurs who make relatively less money from their startups compared to other entrepreneurs in the same region and industry are more likely to move to other industries for wage jobs.

Model Results

Now I turn to multivariate regression models to further investigate the effect of peer influence on the transition to entrepreneurship, while controlling for important covariates of entrepreneurship. Because the descriptive results show a bimodal distribution of the similarity of the current establishment's industry and the industry where an employee chooses to start his/her own business, I dichotomize the ordinal variable, 0 for entrepreneurial entry in a completely different industry, 1 for entrepreneurial entry in similar industry (a value of 1, 2, 3, 4, or 5 of the ordinal variable). Correspondingly, I code the number of former entrepreneurs who started new businesses in similar industry with the current establishment, and the number of former entrepreneurs who started new businesses in a completely different industry than the current establishment. I use a competing risk model (Cox Regression for two competing events) to test how workplace peers' industry-specific startup experiences affect prospective entrepreneurs' choices for their startups.

I proposed two hypotheses that concern peer influence contingent on industry-specific knowledge that prior entrepreneurs may share with their workplace peers when they become

employees. According to the weak peer influence mechanism, a strong correlation does not necessarily exist between the full range of industries where coworkers have created startups and the industries where the focal employees create startups. Instead, employees' likelihood of becoming entrepreneurs would only be significantly affected by the share of coworkers having prior startup experience in the same industries. An alternative mechanism, a strong peer-influence mechanism posits that knowledge about industries constitutes major components that former entrepreneurs share with their work peers. In other words, peer influence shapes potential entrepreneurs' preferences for industries where they create their new businesses. According to this argument, I would observe a strong correlation between the industries where coworkers have created startups and the industries where the focal employees create startups. The descriptive results seem have supported the strong peer influence mechanism.

Further analysis was conducted to test the strong and weak peer influence mechanisms using Cox Proportional models. All the models presented in Table 3 have included the full set of control variables at employee level and establishment level. To demonstrate the contingent effect of peer influence on specific industries, I first tested the number of coworkers who have prior entrepreneurial experience without differentiating whether they have started new businesses in the same industry of the establishment. Results in Model 1 show that the hazard for an employee to enter into entrepreneurship is 7% higher as the number of coworkers with prior entrepreneurial experience increases by one. Many control variables have significant effects on entrepreneurial entry. On average, years of education and age have positive effects on individuals' transitions into entrepreneurship. Men's hazard of becoming entrepreneurs is 67% higher than women, and prior startup experience makes one much more likely to start new business again. I also found that wage income has a substantial negative effect on an employee's chance to become an

entrepreneur, consistent with the opportunity cost argument that employees having a better pay are less likely to forgo wage income loss to start their own business. Among firm-level control variables, whereas firm size discourages employees' transitions to entrepreneurship, the percentage of female employees increases one's chance to become an entrepreneur. It seems puzzling that working with more female employees would make one more entrepreneurial. Further analysis needs to be done to identify whether this effect is the same for male and female employees.

Model 2 and 3 present results from competing risk models that test the effect of work peers' industry-specific prior startup experience on a focal employee's chance to start a new business in a similar industry of the current employment (Model 2) and in a completely different industry (Model 3). The number of entrepreneurial peers starting new businesses in the same industry of the establishment encourages employees to spinout but hinder employees' entrepreneurial entry to other industries. In particular, associated with each additional work peer who has started new business in the similar industry, an employee's rate of transition to entrepreneurship in a similar industry increases by 10% whereas his/her rate of transition to entrepreneurship in a different industry reduces by 11%. However, the number of entrepreneurial peers starting new businesses in industries different than the establishment does not affect employees' likelihood to start new businesses in similar industries but significantly improves their likelihood to start new businesses in other industries.

To further demonstrate that the social influence of entrepreneurial peers is dependent on the industries where they started new businesses, I statistically tested the difference between the effects of same-industry and different-industry entrepreneurial peers. Results are presented in the last two columns of Table 3. Compared to employees who have no colleagues with prior startup

experience, employees who have one colleague with startup experience in the similar industry of the establishment are 23% more likely to become entrepreneurs in similar industries than in different industries. Meanwhile, an employee's odds of starting a new business in different industries to similar industries increase by 21%, associated with each additional colleague with startup experience in industries that are different than the establishment. These arguments support the strong form peer influence mechanism that peer influence shapes potential entrepreneurs' preferences for industries where they create their new businesses. A limitation of my current hypothesis testing of the strong/weak peer influence mechanisms is that I have not controlled for many other conditions that may affect employees' preferences for industries where they create new businesses. More analysis needs to be done to identify the causal effects of peer influence on employees' entries into different industries for entrepreneurship.

My second set of hypotheses posits that whereas individual rates of entrepreneurship will be higher when a greater share of coworkers in work environments has successful prior entrepreneurial experiences, individual rates of entrepreneurship has no relationship with unsuccessful prior entrepreneurial experiences by coworkers in work environment. I argued that work peers with successful startup experience contribute to prospective entrepreneurs' over-confidence biases by two mechanisms: First, individuals may overestimate their probability of success when they learn that their peers have successfully founded new businesses before. that when a greater share of coworkers has successful prior entrepreneurial experiences, individuals tend to believe that their decisions to become entrepreneurs are based on sound reasoning, in spite of their acknowledgement of others' failed experience. By contrast, former entrepreneurs with negative previous startup experience are unlikely to affect their workplace peers' entrepreneurial entries because they might be unwilling to share with others their unsuccessful

startups. Even if they gave work peers heads-ups about the precarious life chances of startups, people who are prone to launching startups might be unreceptive of such information. Based on the two continuous indicators of entrepreneurial outcomes – Z score of income from entrepreneurship and the ratio of wage income to income from previous startup, I code a former entrepreneur's startup experience as positive when his/her income from entrepreneurship is above the average income of entrepreneurs in the same 5-digit industry and county, and when he/she is making more income from current wage job than a previous startup. I present models results for the two hypotheses in Table 4 (for the Z score measure) and Table 5 (for the measure of income ratio). Results shown in Table 4 and Table 5 are quite consistent, both showing that former entrepreneurs' negative and positive startup experiences both increase their work peers' entries into entrepreneurship. They provide mixed results for the hypotheses on previous entrepreneurial outcomes. Hypothesis 3 is supported that individual rates of entrepreneurship will be higher when a greater share of coworkers in work environments has successful prior entrepreneurial experiences. However, unlike what I proposed in Hypothesis 4 that unsuccessful prior entrepreneurial experiences by coworkers in work environment do not reduce individual rates of entrepreneurship, I found that negative prior startup experience of work peers also increases the focal employee's transition to entrepreneurship. It suggests that individuals may boost their confidence in their own ability to successfully create new businesses if they perceive feedback from people who had failed startups useful for their own entrepreneurial activities.

Conclusion

Analyzing a few key conditions of peer influence, my study provides a complex view of how entrepreneurs' mobility from their startups to established organizations affect their work peers' entry to entrepreneurship. Conventional wisdom suggests that an individual's likelihood

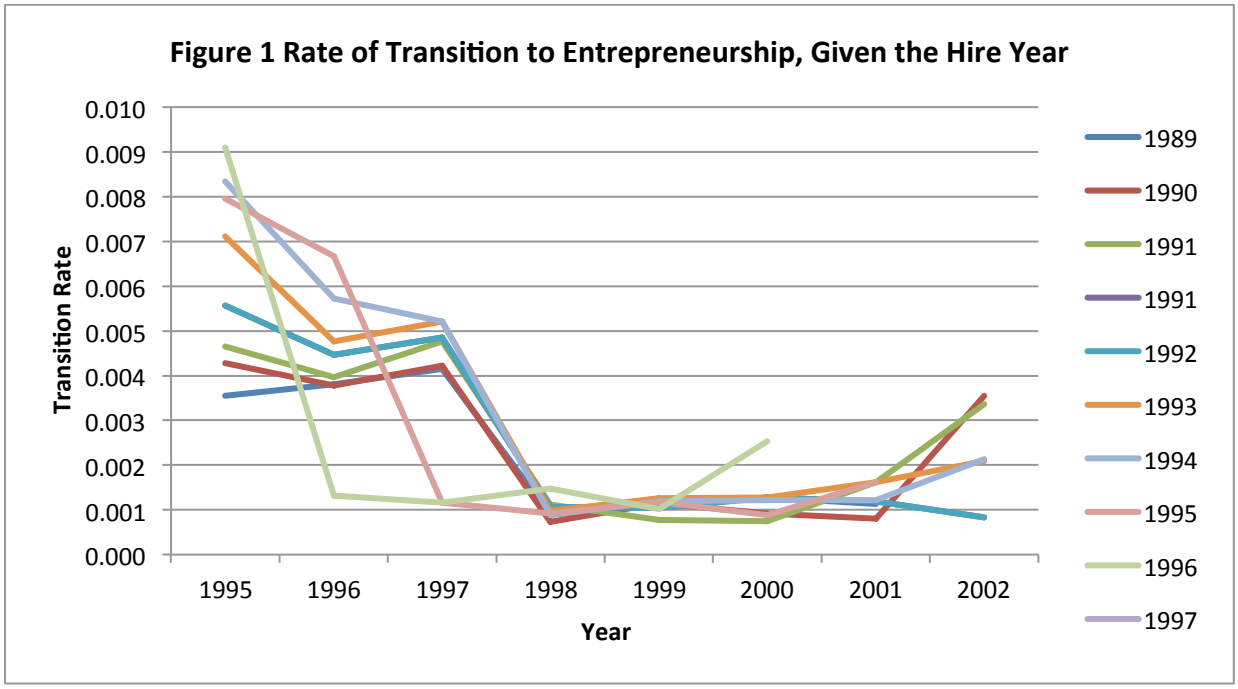
of becoming an entrepreneur is positively associated with his peers' similar previous experiences. Put it in other words, whether you would become an entrepreneur is dependent on what your peers have done in the past. Building on a few studies providing suggestive evidence that entrepreneurial colleagues inspire their work peers to start new businesses, I demonstrate that former entrepreneurs not only make their work peers to be more entrepreneurial but also affect their work peers' choices of the industries for entrepreneurship. In addition to the industry-specific feature of peer influence, I also proposed that former entrepreneurs' performance outcomes serve as a condition that moderates their effects on coworkers' entrepreneurial entry. My results show that whereas individual rates of entrepreneurship are higher when a greater share of coworkers in work environments has successful prior entrepreneurial experiences, and when a greater share of coworkers in work environments has unsuccessful prior entrepreneurial experiences. Even though former entrepreneurs' negative and positive experiences provide different information on the market and what it looks like to be an entrepreneur, they both improve coworkers' chances to start new businesses. It is possible that former entrepreneurs do not tell their work peers their previous failures or success. It is also possible that individuals are susceptible to overconfidence bias and tend to think that they have learned useful information from others' failures. These results are robust because my models have included fixed effects for county and the year when an employee was hired by an establishment.

My research offers a few implications for our understanding of entrepreneurship. First, where previous research has investigated the structural features of workplaces such as size and age, my analyses demonstrate that the percentage of employees who have pervious startup experience also explains workplaces' capability of spawning entrepreneurial activities. Established organizations are important source of entrepreneurship in capitalist societies,

partially because they make it possible for individuals to move between employment and entrepreneurship and they mix together individuals with various previous experiences. Second, given that established organizations serve as a setting for the occurrence of social contagion process of entrepreneurship among employees, organizational conditions that affect employee's interaction and communication have crucial implication for the flow of information and ideas that might inspire entrepreneurial entry. Investigating such conditions requires rich information on the informal social groups within organizations and better data on the frequency of employees' interaction. Third, my finding that former entrepreneurs' previous failures do not discourage their work peers' entrepreneurial activities reveals a possible mechanism that explains the high failure rate of entrepreneurship. It seems that individuals are not learning about the low life chances of startups from others' previous failures and information about negative entrepreneurial experiences does not flow as much as positive ones. Future research may investigate whether feedback from others' negative entrepreneurial experience can be more effective for learning about how to succeed in creating new businesses.

Table1. Percentage of Employees Transition to Entrepreneurship between 1990 and 2002

First year employed in an establishment	Percent
1990	4.38
1991	4.36
1992	4.70
1993	5.13
1994	4.87
1995	3.54
1996	2.33
1997	0.51



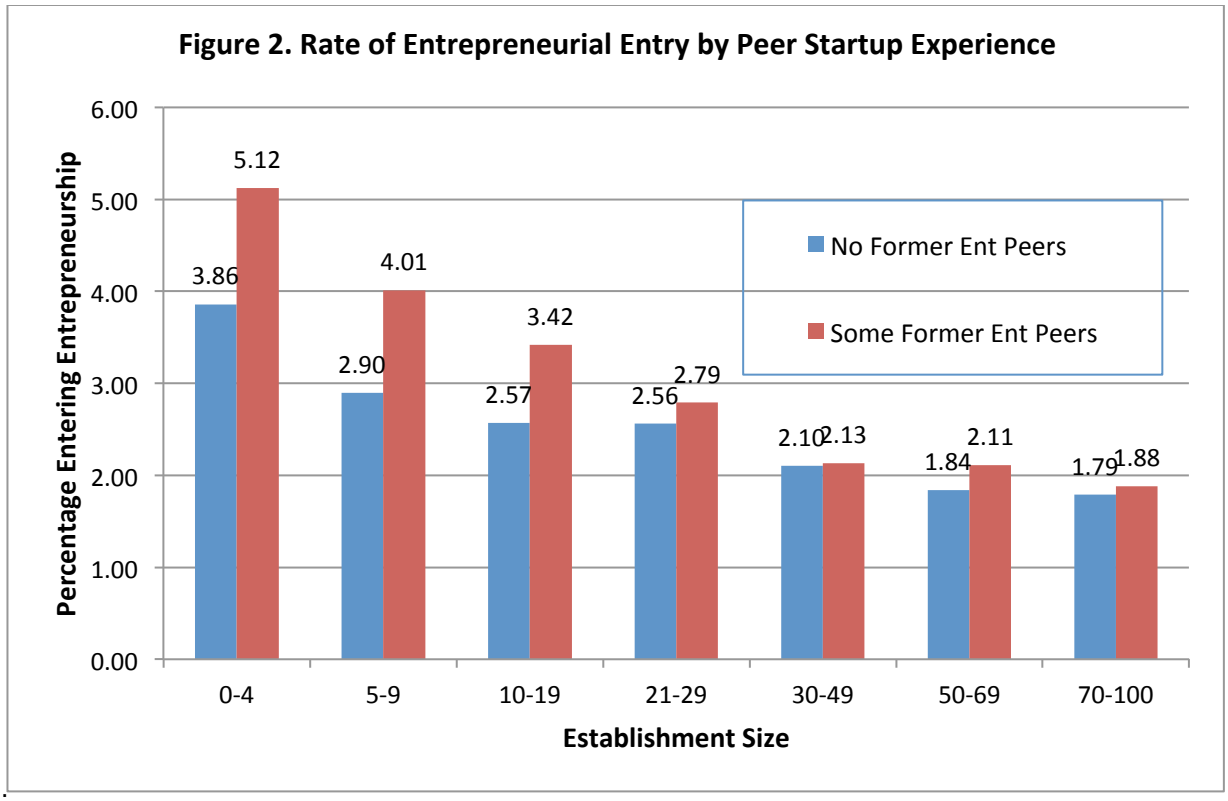


Figure 2. Rate of Entrepreneurial Entry by Peer Startup Experience
Percentage Entering Entrepreneurship
6.00
5.00
4.00
3.00
2.00
1.00
0.00
5.12
3.86
4.01
2.90
3.42
2.57
2.79
2.56
2.10
2.13
1.84
2.11
1.79
1.88
No Former Ent Peers
Some Former Ent Peers
0-4
5-9
10-19
21-29
30-49
50-69
70-100
Establishment Size

Figure 3.

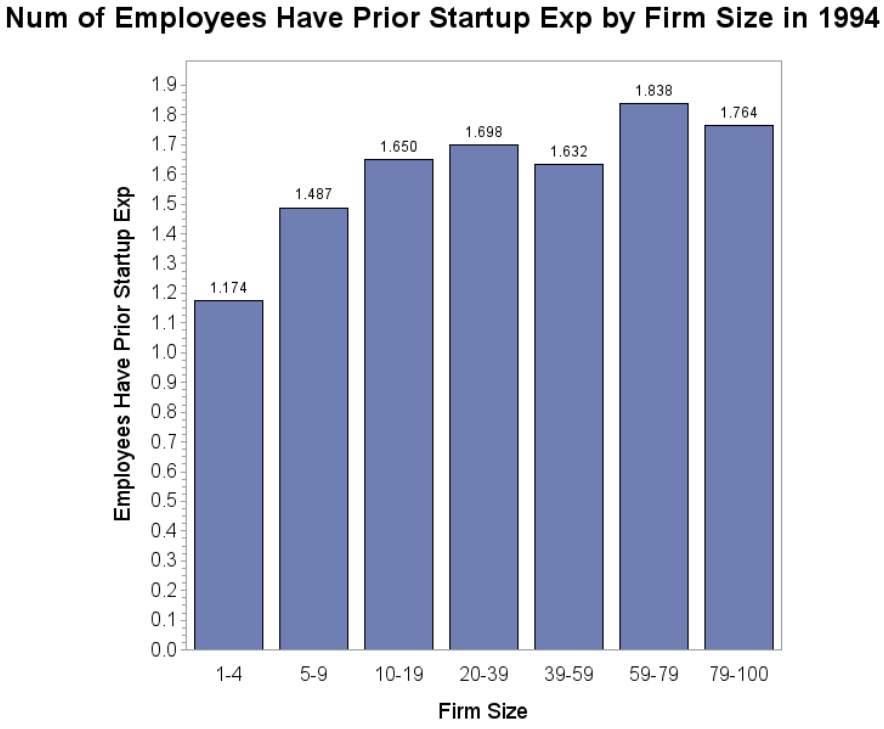

Num of Employees Have Prior Startup Exp by Firm Size in 1994
Employees Have Prior Startup Exp
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
1.174
1.487
1.650
1.698
1.632
1.838
1.764
1-4
5-9
10-19
20-39
39-59
59-79
79-100
Firm Size

Figure 4. Similarity of the Current Establishment's Industry and a Former Entrepreneur's Industry/a New Entrepreneur's Industry

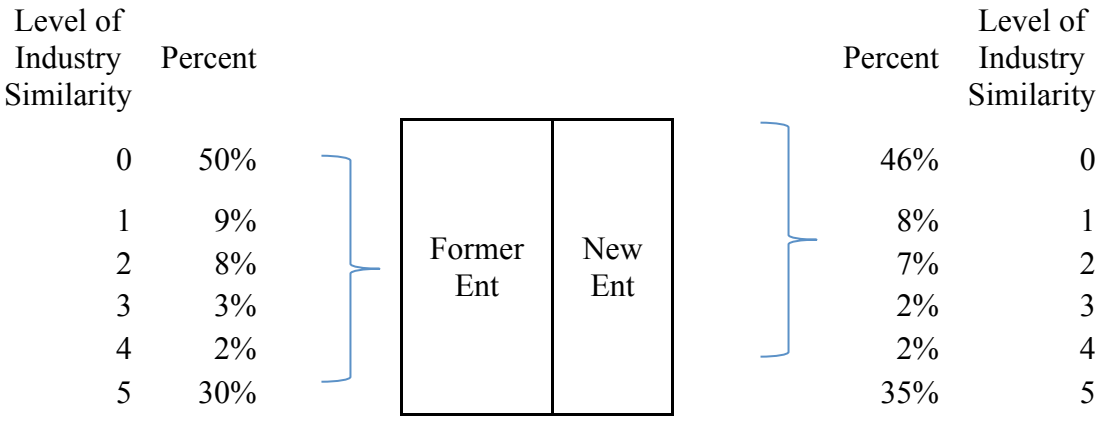


Figure 5

Similarity of the Current Establishment's Industry and a New Entrepreneur's Industry

Similarity of the Current Establishment's Industry and a Former Entrepreneur's Industry	0	1	2	3	4	5
0	62	35	36	37	25	37
1	7	35	6	7	11	7
2	4	3	32	5	9	8
3	2	2	3	25	1	2
4	1	2	2	1	34	2
5	23	23	21	25	20	45

Table 2. Distribution of Two Measures for Former Entrepreneurs' Startup Outcomes

	Ratio of Wage Income to Entrepreneurial Income		Z score of entrepreneurial income in a county/industry	
	Similar	**Different**	**Similar Industry**	**Different Industry**
99%	70.09	160.96	3.63	3.13
95%	6.17	18.05	2.17	1.73
90%	2.90	7.48	1.70	1.19
75%	1.46	2.61	1.02	0.36
50%	1.09	1.27	0.32	-0.29
25%	0.94	0.67	-0.34	-0.75
10%	0.57	0.16	-0.87	-1.04
5%	0.29	0.04	-1.08	-1.22

Table 3. Competing Risk Model Estimates of the Transition to Entrepreneurship

	Model 1		Model 2		Model 3		Compare Model 2and 3	
	All Entries		In Similar Industry		In Diff Industry			
Variable	**Beta**	**P**	**Beta**	**P**	**Beta**	**P**	**Beta**	**P**
# of Ent peers	0.075	<.0001						
	(0.006)							
# of Ent peers in the similar ind			0.088	<.0001	-0.117	<.0001	0.205	<.0001
			(0.007)		(0.018)			
# of Ent peers in diff ind			-0.002	0.899	0.238	<.0001	-0.241	<.0001
			(0.019)		(0.010)			
Age	0.212	<.0001	0.211	<.0001	0.209	<.0001	0.002	
	(0.004)		(0.005)		(0.006)			
Age squared	-0.002	<.0001	-0.002	<.0001	-0.002	<.0001	0.000	
	(0.000)		(0.000)		(0.000)			
Years of Education	0.069	<.0001	0.074	<.0001	0.062	<.0001	0.013	
	(0.003)		(0.004)		(0.005)			
Days of unemployment this Year	0.001	<.0001	0.001	<.0001	0.002	<.0001	-0.001	<.0001
	(0.000)		(0.000)		(0.000)			
Male	0.508	<.0001	0.567	<.0001	0.414	<.0001	0.153	<.0001
	(0.018)		(0.024)		(0.028)			
Prior Startup Exp	0.496	<.0001	0.160	<.0001	0.884	<.0001	-0.723	<.0001
	(0.026)		(0.039)		(0.037)			
Log income	-0.181	<.0001	-0.115	<.0001	-0.248	<.0001	0.134	<.0001
	(0.007)		(0.010)		(0.010)			
Log firm size	-0.199	<.0001	-0.246	<.0001	-0.130	<.0001	-0.116	<.0001
	(0.006)		(0.008)		(0.009)			
Log mean income of employees	0.067	<.0001	0.048	0.001	0.078	<.0001	-0.031	
	(0.011)		(0.015)		(0.016)			
Percentage of Female Employees	0.282	<.0001	0.340	<.0001	0.193	<.0001	0.147	<.0005
	(0.024)		(0.030)		(0.039)			
Have at least one self-employed	-0.011	0.602	0.103	<.0001	0.038	0.3108	0.065	
	(0.021)		(0.026)		(0.038)			
Founding Year of an Establishment	0.027	<.0001	0.046	<.0001	0.005	0.3284	0.041	<.0001
	(0.003)		(0.004)		(0.005)			
Fix Effects of Counties								
Fixed Effects of Year Recruitment								
-2 LOG L	406434		240457		165078			
AIC	406460		240485		165106			
BIC	406564		240590		165206			
OBS	2589580		2589580		2589580			

Table 4. Competing Risk Model Estimates of the Transition to Entrepreneurship: Entry into Same or Different Industries

	Model 1			Model 2		
	Entry in Same Industry			Entry in Diff Industry		
Parameters	**Beta**	**P value**	**HR**	**Beta**	**P**	**HR**
Z score of Entrepreneurial Income						
Negative Exp in Similar Ind	0.513	<.0001	1.671	-0.053	0.282	0.948
	(0.038)			(0.050)		
Positive Exp in Similar Ind	0.398	<.0001	1.489	-0.163	<.0001	0.85
	(0.032)			(0.041)		
Negative Exp in Similar Ind	-0.012	0.800	0.988	0.577	<.0001	1.78
	(0.048)			(0.042)		
Positive Exp in Similar Ind	-0.045	0.245	0.956	0.543	<.0001	1.721
Individual Level Control	(0.039)			(0.036)		
Age	0.211	<.0001	1.235	0.210	<.0001	1.234
	(0.005)			(0.006)		
Age squared	-0.002	<.0001	0.998	-0.002	<.0001	0.998
	(0.000)			(0.000)		
Years of Education	0.074	<.0001	1.077	0.060	<.0001	1.062
	(0.004)			(0.005)		
	0.001	<.0001	1.001	0.002	<.0001	1.002
Days of unemployment this Year	(0.000)			(0.000)		
Male	0.570	<.0001	1.769	0.421	<.0001	1.523
	(0.024)			(0.028)		
Have Prior Startup Exp	0.199	<.0001	1.220	0.977	<.0001	2.656
	(0.039)			(0.036)		
Log income	-0.115	<.0001	0.892	-0.248	<.0001	0.780
	(0.010)			(0.010)		
Firm Level Control						
Log firm size	-0.237	<.0001	0.789	-0.104	<.0001	0.901
	(0.007)			(0.009)		
	0.051	0.001	1.052	0.069	<.0001	1.071
Log mean income of employees	(0.015)			(0.016)		
	0.348	<.0001	1.416	0.179	<.0001	1.196
Percentage of Female Employees	(0.031)			(0.039)		
	0.220	<.0001	1.246	-0.117	0.000	0.889
Have at least one self-employed individual	(0.025)			(0.032)		
	0.045	<.0001	1.046	0.003	0.512	1.003
Founding Year of an Establishment	(0.004)			(0.005)		
Fix Effects of Counties						
Fixed Effects of Year Recruitment						
-2 LOG L	237902			162652		
AIC	237930			162680		
Obs	2589580			2589580		

Table 5. Competing Risk Model Estimates of the Transition to Entrepreneurship: Prior Startup Outcomes

	Model 1 Entry in Same Industry			Model 2 Entry in diff Industry		
Parameters	**Beta**	**P**	**HR**	**Beta**	**P**	**HR**
Ratio of Wage to Entrepreneurial Income						
Negative Exp in Similar Ind	0.435	<.0001	1.546	-0.160	0.0002	0.852
	(0.033)			(0.043)		
Positive Exp in Similar Ind	0.466	<.0001	1.594	-0.136	0.0014	0.873
	(0.033)			(0.042)		
Negative Exp in Similar Ind	-0.073	0.0539	0.929	0.442	<.0001	1.556
	(0.038)			(0.035)		
Positive Exp in Similar Ind	-0.001	0.9835	0.999	0.606	<.0001	1.833
Individual Level Control	(0.040)			(0.037)		
Age	0.211	<.0001	1.24	0.209	<.0001	1.233
	(0.005)			(0.006)		
Age squared	-0.002	<.0001	1.00	-0.002	<.0001	0.998
	(0.000)			(0.000)		
Years of Education	0.074	<.0001	1.08	0.061	<.0001	1.063
	(0.004)			(0.005)		
	0.001	<.0001	1.00	0.002	<.0001	1.002
Days of unemployment this Year	(0.000)			(0.000)		
Male	0.571	<.0001	1.77	0.414	<.0001	1.513
	(0.024)			(0.028)		
Have Prior Startup Exp	0.182	<.0001	1.20	0.910	<.0001	2.484
	(0.039)			(0.036)		
Log income	-0.115	<.0001	0.89	-0.249	<.0001	0.779
	(0.010)			(0.010)		
Firm Level Control						
Log firm size	-0.238	<.0001	0.79	-0.120	<.0001	0.887
	(0.008)			(0.009)		
	0.048	0.001	1.05	0.072	<.0001	1.075
Log mean income of employees	(0.015)			(0.016)		
	0.344	<.0001	1.41	0.182	<.0001	1.200
Percentage of Female Employees	(0.031)			(0.039)		
	0.149	<.0001	1.16	-0.037	0.2767	0.964
Have at least one self-employed individual	(0.027)			(0.034)		
	0.046	<.0001	1.05	0.003	0.5707	1.003
Founding Year of an Establishment	(0.004)			(0.005)		
Fix Effects of Counties						
Fixed Effects of Year Recruitment						
-2 LOG L	240303.7			165069.9		
AIC	240331.7			165097.9		
Obs	2589580			2589580		

CHAPTER TWO: WHEN DO MARRIED COUPLES BECOME CO-ENTREPRENEURS: THE EFFECTS OF FAMILY AND WORKPLACES

Post-industrial societies have experienced profound social changes in labor market and employment, leading to dramatic increases in dual-earner couples. In the United States, the percentage of dual earner couples among families with at least one labor force participant has increased to 67% in 2010, from 41% in 1980 (Benson 2010). The outnumbering of male earner families by dual-earner families is not limited to the United States but is a feature shared by every capitalist society. In France, 62.4% of couples in 2002 were double earners, according to the Labor Force Survey (LFS) (Lesnard 2008). In Nordic countries, men and women have nearly same labor participation rates in 2010, and a full- time dual-earner family model has become the predominant family model (Larsen and Møberg 2012). Recognizing the rises of dual-earner families in modern society, some sociologists have suggested that family households have become increasingly important in shaping gender inequality (Curtis 1986; Western et al. 2008).

Family households not only redistribute income but also affect men and women's access to opportunities in the labor market. Studies have shown that wives and husbands' socio-economic attainments have become highly interdependent, manifest in their associated earnings (Cancian and Reed 1999; Fernandez et al. 2005; Schwartz 2010; Western et al. 2008), and job mobility (Benson 2010 ; Bielby and Bielby 1992; Geist and McManus 2012). Even though they are seemingly independent employees of the labor force, wives and husbands often make their joint decisions together and their joint decisions have found to be influential in increasing gender inequality in wage earnings (Sorenson and Dahl 2013).

The existing literature has focused on understanding the conditions under which spousal couples jointly change their wage jobs and how their joint choices affect husbands and wives' wage salaries (Bielby and Bielby 1992; Geist and McManus 2012; McKinnish 2008). The intense focus on wage jobs is natural: most people are employees of established organizations for the bulk of their careers, and most spousal couples earn income from their wage jobs. Yet, employment in an established firm is far from the only career choice (Sørensen and Sharkey 2014), and economic production is far from being entirely separated from family production in modern society (Winch 1970).

Every year, millions of individuals embark on new venture creation and the numbers are still increasing. Empirical evidence has shown that one fifth of American women have had experience with creating new businesses by their mid-thirties (Ferber and Waldfogel 1998), and 40% of American men had such experience by their mid-fifties (Arum and Mueller 2004). In post-industrial societies where the service sector has replaced the manufacturing sector in taking the precedence in the economy (Kalleberg 2011), it is expected that more individuals will enter into entrepreneurship because creating new businesses requires less financial resources than before. Because service industries are less male-predominated than manufacturing, scholars have also anticipated a larger percentage of younger women entering into small enterprises than older cohorts. Among the numerous people starting their own businesses, about 80% of them involve family members and at least 35% of them have spouses as co-owner founders (Aldrich and Cliff 2003; Ruef et al. 2003; Sharifian et al. 2012). Taking together, numerous spousal couples face the problem of choosing between wage jobs and starting their own new businesses, and their

decisions may have profound influences for their careers, as well as their overall family well-being.

This paper investigates the question of under what conditions spousal couples depart from their wage jobs to become co-entrepreneurs. Whereas some spousal couples jointly create new business together, others may decide to have one person becoming an entrepreneur while the other person remaining employed in an established organization. Two theoretical models, one economic, the other sociological, have provided different explanations of the heterogeneity of spousal couples' joint entrepreneurial statues. The neoclassical economic model conceptualizes entrepreneurship as a process of discovering and pursuing startup opportunities. It posits that individuals acquire knowledge know-how to discover startup opportunities, and they are more likely to exploit opportunities if they can mobilize resources needed for achieving success (Agarwal et al. 2004; Franco and Filson 2006; Hellmann 2007; Shane 2003). In the process of discovering and pursuing startup opportunities, individuals are likely to recruit others when they receive informational or material support from potential team members. An implicit assumption of the neoclassical economic model is that discoveries and pursuit of startup opportunities are gender-neutral, i.e. universalistic with regard to gender. Accordingly, a spousal couple is likely to get involved in creating new businesses together if at least one of them has discovered a startup opportunity and the other person is capable of providing resource. It means that a spousal couple's chances of becoming co-entrepreneurs are independent of whether it is the wife or the husband who discovers an opportunity or/and initiates entrepreneurial activities.

However, the sociological literature suggests that the process of spousal couples' transitions to co-entrepreneurship may be gender asymmetric. The first potential gender asymmetry may stem from the gender-biased perceptions of entrepreneurial opportunities

discovered by men and women. Status expectation theory posits that social beliefs about gender imply hegemonic assumptions, leading individuals to discriminate (often unconsciously and automatically) against women by discounting their competencies at highly valued skills (Berger et al. 1980; Ridgeway et al. 1994). Abundant empirical evidence shows that new venture creation has historically been seen as an arena for business*men*, and the purported characteristics of successful entrepreneurs, such as "agentic," "pragmatic," and "risk-taking," are stereotypically masculine characteristics (Calas et al. 2009). When gender acts as a salient status characteristic, cultural beliefs about gender prescribe higher expectations for men's competence (Foschi 2000). Accordingly, a startup opportunity discovered by a man may be perceived as more promising, and thus worth his own effort and his wife's time and resource. Such a gender-biased perception of men's better capability of identifying startup opportunities makes them more accountable as the person initiating entrepreneurial activities and more likely to convince their spouses to join as co-founders.

The second possible gender asymmetry in the process of co-entrepreneurship may be from family-embedded gender roles, male breadwinner and female homemaker roles (Brines 1994; Gorman 1999). Men and women's self-fulfillment of their gender roles affect their propensities to exit their wage jobs to join their spouses in founding new businesses. Research has shown that women's own wages are less predictive of their exits from the labor force than their husbands' (Shafer 2011), in spite of women's increased labor participation rates since the 1960s. Similar gender patterns -- women compromise their own careers for families or husbands' entrepreneurial ventures -- have also been found in studies of self-employment (Budig 2006a; Jurik 1998). The implication of these findings for spousal couples' co-entrepreneurship is that even when startup opportunities discovered by men and women are equally valuable, women

would be less likely to recruit their husbands as co-founders than men to recruit their wives because normative expectations presume the priority of men's career choice and women's support for their husbands' careers. It suggests that men may be less likely to act as co-founders if they themselves were not persons discovering a startup opportunity.

Distinguishing between the two competing theoretical accounts is crucial for achieving a better understanding of spousal couples' joint choices in the setting of entrepreneurship, which has been less explored than other socioeconomic attainments in the labor market. However, it has been difficult to conduct causal analysis of spousal couples' joint involvement in entrepreneurship rigorously. First, it has been difficult to demonstrate the causal effect of spousal relationships on their co-entrepreneurship. It requires one to sort out the contingent effects of workplaces and family households in a two-stage process: Once men or women identified startup opportunities at their wage jobs, how do gendered roles embedded in spousal relationships affect their spouses' likelihood to join as co-founders? Previous research has suggested that working on wage jobs in established organizations allows prospective entrepreneurs to discover opportunities and assemble resources. In addition, the opportunity cost of launching a startup is dependent on a promising entrepreneur's current wage salary (Amit et al. 1995). Thus, a prediction of spousal couples' co-entrepreneurship requires information on the potential opportunities wives and husbands face in their workplaces. In addition, family conditions, including the relative wage income of husband and wife, and the number of children, affect the salience and relevance of gendered roles, and accordingly the magnitude of gender asymmetry in decision-making. However, previous designs have rarely collected information on both. Whereas data sets on households, including Panel Study of Income Dynamics, have little information on individuals'

workplaces, research designs for businesses, such as Panel Study of Entrepreneurial Dynamics, have focused on new businesses but fail to provide rich information on family households.

Second, it has been difficult to observe a full set of spousal couples' entrepreneurship status even though they all contribute to the heterogeneity: neither of a spousal couple became an entrepreneur, one of them, wife or husband, and both of them. Most previous designs have included entrepreneurial founders and thus left out the group of people who did not become entrepreneurs. Without an observation of a complete set of outcomes regarding entrepreneurial entry, it would be difficult to identify the mechanisms of sorting spousal couples into different entrepreneurial status, in order to explain why some couples become entrepreneurs together whereas others only have one person involved.

I address these limitations by using data from Sweden to investigate wives and husbands' transitions into entrepreneurship, taking into account their separate employment in the labor market and their joint household conditions. Sweden has been an exemplary corporatist society that has a long tradition of adopting public policies to rectify gender-stereotyped social roles for men and women (Furåker 2005). Studying a country that has always been expected to have less gender inequality than other capitalist societies allows me to demonstrate the resilient cultural beliefs about gender and their effects on perpetuating gender inequality. To develop a theoretical model, I first identify the "lead entrepreneur" and the "follower" in a spousal couple by estimating each person's propensity to entrepreneurial entry based on organizational conditions. These conditions include networks of work peers and the bureaucratic characteristics of employer organizations. I then theorize family household conditions – spousal couples' comparative wage advantage and gender expectations associated with children – that affect spousal couples' joint involvement in entrepreneurship. The data I use for my analysis combine a

matched employee-employer data set of working adults in the Swedish labor markets between 1994 and 2002 and a matched husbands-wives data set. While the matched employee-employer data allow me to track employees as examine their workplace conditions, the matched husbands-wives data provide rich information on family households that may contribute to spousal couples' transitions into entrepreneurship.

My results suggest that women's chances to become entrepreneurs are constrained by their limited access to entrepreneurial peers at workplaces. Meanwhile, the differential effects of work peers on men and women's exposures to information on and skills for creating startups are substantially moderated by family conditions. Three family conditions are particularly important: men's dominance in spousal relationships, the relative comparative advantage of spousal couples' earnings, and the presence of children in the households. My results show that family-embedded gender logic interacts with gender difference in social dynamics at workplaces in shaping gender inequality in entrepreneurship.

A THEORETICAL FRAMEWORK OF CO-ENTREPRENEURSHIP

The process that leads to spousal couples' associated involvement in entrepreneurship may consist of two steps: first, an individual's exposure to work peers having previous startup experience increases his/her propensity to start new businesses; second, similar knowledge spillover happens between spousal couples in their households, and wives and husbands decide if they want to create a new business together. To develop a theoretical framework explaining spousal couples' co-entrepreneurship, I first examine each person's potential to become an entrepreneur -- to discover and pursue startup opportunities -- in the context of his/her workplace. I estimate the propensity of entering to entrepreneurship for each member of the spousal couple unit, wife and husband, based on characteristics of workplaces that have found to be predictive

of an employee's entrepreneurial entry. I then propose testable specifications regarding spousal relationships that affect wives and husbands' joint involvement in creating new businesses.

Identifying the "Lead Entrepreneur" and the "Follower"

The literature on employee entrepreneurship has noted the importance of peer influence in shaping employees' entry to entrepreneurship, and they have found that a variety of workplace attributes, including size and age, affect employees' propensities to become entrepreneurs by structuring employees' exposure to work peers who had startup experience (Elfenbein et al. 2010; Gompers et al. 2005; Kacperczyk 2012b; Lazear 2005). Theories have argued that the magnitude of social influence regarding a behavior is affected by the relative number of actors who have such experience in established organizations (Blau 1977: Chapter Two; Blau et al. 1982; Kanter 1977; McPherson and Smith-Lovin 1987). In addition, employees' perceived appropriateness of switching from employment in establishments to starting new firms is dependent on whether their peers have engaged in such activities (Galaskiewicz 1985; Ibarra and Andrews 1993; Lawrence 2006; Sorensen 2002). Under the condition when new businesses' life chances are uncertain, individuals are likely to imitate socially proximate actors to infer the degree to which launching startups is appropriate (Rogers 1995; Stuart and Sorenson 2005). Previous research has demonstrated that individual rates of entrepreneurship are higher in work environments where a greater share of coworkers has prior entrepreneurial experiences.

An important implication of a peer-influence effect on entrepreneurial entry is that women may be less likely to become entrepreneurs than men because of their less exposure to entrepreneurial peers. In Sørensen (2007)'s analysis of employees in Denmark, male employees' odds of transitioning into entrepreneurship are twice as much as the odds for female employees. A relatively smaller but still substantial gender gap of 84% is found in Kacperczyk (2012a)'s

research on mutual funds in the U.S. Many other studies have also found significant gender differences in entrepreneurial entry (Bates 1995; Dobrev and Barnett 2005; Kacperczyk 2012b). Because these studies have controlled for a large number of influential factors at establishments' level, the remained gender gaps in entrepreneurship entry between men and women are more likely to be from individual differences in exposure to peer influence and/or the magnitude of peer influences on them.

My prediction of individual employees' transitions to entrepreneurship takes into account sex segregation in interactional networks, and differential allocation of network rewards for men and women (Friedkin and Cook 1990; Marsden and Friedkin 1993). Peer influence theory has suggested that individuals have preference for network homophily, i.e., interaction with others in the same sex group (Brass 1984; Fernandez and Sosa 2005; Ibarra 1992; McPherson et al. 2001). Because entrepreneurship has historically been male-predominated, established organizations often have more male employees with previous startup experience than female employees with similar experience (Calas et al. 2009). Under the condition that there are more male employees having startup experience than female employees, gender homogeneity in social networks limits women employees' exposure to entrepreneurial peers. Given the availability of network ties with work peers, men may receive greater instrumental returns from their exposure to male co-workers. Previous research has suggested that whereas women are more likely to develop friendship with and seek for emotional help from women, both of the two sexes rely on social ties with men for instrumental resources (Ibarra and Andrews 1993). Because transmission of information and knowledge regarding startups often happens at informal social events or occasions, people in the same sex group have more opportunities to share information with each other. Based on above reasoning, women would be less likely than men to

make startup discoveries and thus are less likely to become entrepreneurs.

Gender Roles and Spousal Couples' Co-entrepreneurship

Women may be less likely to become entrepreneurs given the constraints they face at workplaces, but their chances may increase if they are exposed to entrepreneurial husbands at home. It means that whereas women are constrained by their opportunities at workplaces to become the lead entrepreneurs, they are likely to transition to entrepreneurship as followers of their husbands. Previous research has provided some empirical support that knowledge spillover that happens among coworkers might also occur between husbands and wives, because couples share a large amount of time in households (Bruce 1999). For example, by analyzing data from Panel Study of Income Dynamics, Parker (2008) found that the unconditional probability of being a business owner in the sample is 13.3% for men and 6.8% for women. However, "men whose wife is certain of being a business owner have a 17 percentage point higher probability of being a business owner than if they were married to a woman who was certain not to be a business owner. The corresponding figure for women is 19 percentage points." Thus, in addition to workplaces, family households also shape the probability that an individual transitions to entrepreneurship.

Research on labor economics views knowledge spillover within spousal couples as a process in which both male and female spouses receive positive knowledge transfers from the other. Extending their explanations of entrepreneurial entry into the domain of family, researchers adopting an economic model argued that information and knowledge about business ownership and business conditions can be shared easily and efficiently between spouses (Bruce 1999; Parker 2008). Thus an individual's entry to entrepreneurship is not just an independent occupation choice, instead, it is a transition associated with the entrepreneurial entry of his/her

spouse. While economic theories have incorporated spousal couples' interdependence in their explanations of co- entrepreneurship, they did not further specify the conditions that may affect husbands or wives' dominance in their mutual influence. As a consequence, empirical studies adopting an economic model either only investigated the effect of a husband's self-employment experience on his wife's (Bruce 1999), or examined wife and husband's mutual influence without comparing their effects (Parker 2008).

However, the sociological literature on spousal relationships has suggested the dominant influence of husbands in spousal couples. Scholars of gender have argued that the male-breadwinner cultural norm has proven resilient in the past four decades, and continues to shape the expectations that men should be the primary earners (Cha and Thébaud 2009; Gorman 1999; Thébaud 2010). The cultural norm of male breadwinners in families prescribes the dominance of husbands in spousal couples' mutual influence and the priorities given to husbands' attainment in the labor market. Research has consistently found that husbands' employment affects wives' socioeconomic attainment, including their earnings, exit from labor force, and job mobility. However, wives' do not affect their husbands' (Shauman and Noonan 2007). Furthermore, even though women's employment has increased dramatically (Cotter et al. 2004), women are less likely to relocate for better jobs so as not to influence their husbands' jobs. More often than not women were the "tied movers" or "tied stayers" in job mobility or family immigration (Benson 2010 ; Bielby and Bielby 1992).

Analyzing a representative sample of entrepreneurial teams, Yang and Aldrich (2014) found that gender asymmetry exists in spousal teams that husbands' employment and wages are more predictive of wives' status in the new businesses. These studies suggest that in the transitioning process from employment to entrepreneurship, husbands are more likely to be the

entrepreneurs initiating decisions regarding startups whereas wives are more likely to be the tied "movers" joining their husbands to be supportive of family businesses. In contrast with husbands who are likely to be the lead entrepreneurs in spousal teams, wives who have made startup discoveries on their wage jobs may face normative barriers in recruiting their husbands.

Therefore, I argue that knowledge spillover about startups between husbands and wives is more likely to be driven by a male- dominant logic rather than a gender-neutral logic. Therefore, I expect that:

Hypothesis 1: Whereas husbands' higher propensities to entrepreneurship lead to spousal couples co-entrepreneurship, wives' higher propensities to entrepreneurship do not necessarily increase spousal couples' chances to start new businesses jointly.

The Effects of Fatherhood and Motherhood

Previous research has extensively examined the effects of children on men and women's socio-economic attainment. Although the sizes of the effects vary across contexts, motherhood generally has negative effects on women's earnings (Budig and England 2001; Budig and Hodges 2010; Correll et al. 2007; Townsend 2002), whereas fatherhood often leads to a "daddy bonus" for men in wage jobs (Glauber 2008; Hodges and Budig 2010; Killewald 2013). To explain motherhood penalties and fatherhood wage premiums, researchers have proposed demand-side and supply-side theories (Budig and England 2001; Correll et al. 2007; Killewald 2013).

The demand-side theory posits that social beliefs about motherhood and fatherhood imply hegemonic assumptions, leading individuals to discriminate (often unconsciously and automatically) against mothers by discounting their competencies at highly valued skills (Berger et al. 1980; Ridgeway et al. 1994). For example, drawing on status characteristic theory, Correll

et al. (2007) argued that motherhood is a devalued status in workplace settings, and thus associated with lower expectations for mothers' performance. Because good performances are inconsistent with expectations for a devalued status of motherhood, mothers' performances would be judged with stricter standards even when they perform well at work. Their experimental studies proved that women were penalized for their motherhood characteristics and perceived less competent than women who do not have kids. By contrast, fatherhood is a valued status in workplace settings and it is often associated with higher expectations for performance and commitment at work than "manhood" (Coltrane 2000; Correll et al. 2007).

Whereas the demand-side theory emphasizes the audiences' biased evaluations of mothers and fathers, the supply-side theory highlights individuals' self-fulfillment of gendered expectations for their responsibilities at home and work. Because normative expectations regarding motherhood presume women's support for family and responsibility for childcare, women's productivity at work and the extent to which women devote themselves to their jobs depend on household conditions regarding children (Budig 2006b; Jurik 1998). Budig and England (2001) examined up to five mechanisms that lead to motherhood penalty and they have found that women lose at least some employment time for child-rearing, and the loss of on-the-job training interrupts women's cultivation of firm-specific skills. Their results also showed that even when mothers do not leave their employment for childcare, they are still underperformed at work because they have to store energy for anticipated work at home (Becker 1991). Hochschild (1989) has made a similar argument that the extra burden of the second shift makes women less engaged at their wage jobs. By contrast, research on fatherhood wage premium has shown that fatherhood increases men's feelings for taking responsibilities and motivates men to change their behaviors, such as work longer hours, for better labor-market productivity and income (Glauber

2008; Hodges and Budig 2010; Killewald 2013; Sheldon and Burke 2000).

The supply-side and demand-side theories both suggest that motherhood and fatherhood shape the audiences' expectations for men and women, and individuals' self-fulfillment of responsibilities for work and family. Following previous research, I argue that in the field of entrepreneurship, fatherhood is associated with men's more ambitions for earning household income and expectations that men become more responsible for their behaviors in the labor market. As a consequence, men with more children are under stronger pressure to pursue startup opportunities to fulfill breadwinner roles, while everything else, including wage salaries, remains equal. Because motherhood shapes expectations for women's heavy responsibility for childcare and more flexible work schedules, women may be more likely to become co-founders for the sick of family and their husbands' careers. According to my argument, the male advantage in recruiting wives as cofounders is even bigger among spousal couples having more children. Thus, my hypothesis 2 is:

Hypothesis 2: The positive effect of husbands' propensities to entrepreneurship on spousal couples' likelihood to be co-entrepreneurship is larger when the salient gender roles associated with fatherhood and motherhood are relevant.

Gender Deviance and Spousal Couples' Comparative Advantage

A third specification of dual-earner couples' transitions into entrepreneurship concerns spousal couples' comparative wage advantage. Scholars of gender inequality have argued that the gender roles embedded in spousal relationships have been institutionalized as "breadwinners" and "homemakers," with these terms indicating men's primary responsibility for earning (most) household income and women's economic (at least partial) dependency on their husbands (Bittman et al. 2003; Brines 1994; Greenstein 2000; Schneider 2012). Empirical studies have

demonstrated that men often demonstrate their fitness for the role of breadwinner by earning more income than their wives. In normal situations, spousal couples' relative wage earnings are consistent with their support and dependent relations (Ridgeway 2011: Chapter 5). However, in situations where wives turned out to be the primary earner, couples face the problem of holding themselves accountable to normative expectations. Research on the division of labor at home suggested that when married couples fail to conform to the "male breadwinner" expectation, they attempt to engage in gender-typical activities inside the family household so as to neutralize the gender deviance created by the disparity in their achievements (Bittman et al. 2003; Brines 1994; Greenstein 2000; Schneider 2012).

Based on the gender deviance neutralization argument, I predict that in the setting of new businesses where tasks are male-stereotyped, deviant couples in which husbands earn less in the labor market than their wives will avoid working together in creating new ventures so as not to not further threaten their masculinity and femininity (Schneider 2012: 1033). Because stereotypical startups are highly profitable, creating new businesses may be seen as a way that allows husbands to correct for their gender deviance in earnings. Thus husbands will take the opportunity to demonstrate that they can earn more household income, and their wives would respect for husbands' independent involvement in new businesses. Thus I propose that in dual-earner married couples, gender deviance in socioeconomic attainment in the labor market would deter husbands and wives' joint involvement in new businesses.

H3. Deviant couples are less likely than normal couples to simultaneously become entrepreneurs.

Variance of Gender Egalitarianism among Spousal Couples

The lower likelihood of deviant couples' joint involvement in new businesses that is proposed in hypothesis 3 might be a result of higher levels of gender egalitarian attitudes shared

by “deviant” couples. Because family businesses were more present in traditional society than in modern capitalist society, couples whose relationships are less influenced by gender logic would reject the traditional notion of husbands and wives working on new businesses together. This argument suggests that compared to normal couples that are more receptive of family members collectively engaging in activities creating businesses, gender-deviant husbands and wives would find creating family businesses less appealing or less suitable. Accordingly, the extent to which individuals’ acceptance of traditional gender roles in family businesses, rather than gender-deviance mechanism I proposed in hypothesis 3, would be the main driver of deviant couples’ lower likelihood of creating family businesses. This arguments poses threats to the validity of the causal argument I made above that gender deviant couples intentionally avoid working together so as not to further threaten their masculinity and femininity.

To demonstrate the causal effect of gender deviance on deterring spousal couples’ joint involvement in entrepreneurship, I test if the effect of gender deviance is dependent on the type of a new business. When new businesses are high-tech companies or in knowledge-intensive industries, they are the settings infused with less gendered meanings compared to mom-and-pop shops in traditional industries. These businesses may be seen as more appropriate by deviant couples so I would not observe the lower likelihood of deviant couples’ joint involvement than normal couples. So my last hypothesis is:

H4. Deviant couples are less likely than normal couples to simultaneously become entrepreneurs only if the couples are starting new businesses in traditional industries.

GENDER INEQUALITY IN SWEDEN

The national context for my study is Sweden. Sweden has been an exemplary corporatist society that has a long tradition of adopting public policies to rectify gender-stereotyped social

roles for men and women (Furåker 2005). Since the 1970s, extensive family-friendly policies were adopted in Sweden to free women's time from childcare, including extended parental leaves and government subsidies to families and day care centers (Moen 1989). However, empirical evidence suggests that whereas there have been rapid increases in women's employment in the labor market and dual-earner household families in Sweden, substantial gender gaps exist in earnings.

The Swedish gender system in the past three decades has a dual feature of resilient cultural support for reducing gender equality and deregulation of employment relations that freed power to employers but increased gender inequality.

Institutional Support for Gender Egalitarianism

Sweden has been an exemplary corporatist society, in which the socio-democratic welfare state and liberal-egalitarian values have made great strides toward achieving greater gender equality (Goldthorpe 1984). Abundant empirical evidence suggests that among industrialized nations, the level of egalitarianism in gender attitudes is the greatest in Scandinavia, particularly in Sweden (Baxter and Kane 1995). Whereas movements toward greater gender inequality have been stalled in most industrialized societies, egalitarian values supporting a balance between men and women's employment and family responsibilities remained their salience in Sweden (Scott 1982). A report to the United Nation about Swedish women's status explicitly stated: "the aim of a long-term 'programme for women' must be that every individual, irrespective of sex, shall have the same practical opportunities, not only for education and employment, but also in principle the same responsibility for his or her own maintenance as well as shared responsibility for the upbringing of children and the upkeep of the home… the government is well aware that this view appears revolutionary and unrealistic in the eyes of the representatives of many other

countries. A growing opinion in Sweden has, however, rallied to its support." (Dahlström 1971). In addition to their significance in public domains, egalitarian values are also manifest in private domains in Sweden, especially in family households. Empirical studies have found that there have been relatively balanced task relations between husbands and wives in Sweden as compared to other industrialized countries. For example, Swedish women are less economically dependent on their husbands, and Swedish men do more housework than their counterparts in other countries, including the United States, Canada, Australia, and Norway (Baxter and Kane 1995).

In addition to cultural norms supporting gender equity, Sweden has a long tradition of adopting public policies to rectify gender-stereotyped social roles in employment and family responsibility (Furåker 2005). One of the main thrusts of legislative reform in the 1970s was to eliminate or refine the principle that the man is the only or primary breadwinner in the family (Moen 1989: 26). Individual income taxation for everyone was introduced in 1971, which has led to a rapid increase in the extent to which women obtained gainful employment (Wistrand 1981). Comprehensive family-friendly policies were adopted to free women's time from childcare, including extended parental leaves and government subsidies to families and day care centers (Moen 1989). Underlying these inclusive public policies are the concerted efforts made by government and union to improve work conditions for women and working mothers (Scott 1982; Wistrand 1981).

Deregulation of the Labor Market

Some sociologists have depicted the significant shifts toward deregulation and reorganization of employment relations in the United States since the 1970s (Kalleberg 2011; Kalleberg 2009; Osterman 1999). Similar transformations have also occurred in Sweden (Fulcher 1987; Hedström 1986; Kemeny 1992; Rydgren 2005). From the 1950s to the early 1980s, wage

salaries in Sweden were determined to a large extent through centralized collective bargaining at the national level. Solidaristic wage policies were implemented to reduce income disparities for equal jobs across employer organizations and industries. These policies, in combination with the broad coverage of unions and the highly centralized confederation of employers in Sweden, effectively suppressed overall earning inequalities in the Swedish labor market (Hibbs 1991; Rosenfeld and Kalleberg 1990). However, they also resulted in a few unexpected consequences, such as unnatural constraints on firms' competition and productivities. Since the early 1980s, market forces became predominant in regulating employment relations. A number of new legislative reforms were adopted to increase firms' autonomy in determining wages (Fulcher 1987). Unlike the declining union strength in the United States since the1980s, trade unions maintained their broad coverage in Sweden and continued to be influential in negotiating wages with employers. However, unions' attitudes toward solidaristic employment systems became mixed since the late 1970s, and more policies were called for to unleash freedom to individual organizations or local governments. Since then, the national confederation of employers adopted less-interventionist practices to improve firms' bargaining power in determining wages. Some empirical studies have shown that as more freedom and latitude were given to local agreements, inter-organizational variation in earnings between equal jobs has increased remarkably in Sweden (Blau and Kahn 1996; Elliott and Bender 1997; Hibbs 1991).

Even though cultural support for greater gender equity in Sweden has been robust, substantial gender inequality exists in Sweden. In their cross-national studies, Mandel and his associates have reported that Swedish women, especially mothers of preschool children have relatively high labor participation rates compared to other countries. In particular, the percentage of women employed in the public sector in Sweden is 42%, more than twice the percentage of

women employed in this sector in any of the other 6 industrialized countries studied (Gornick and Jacobs 1998). However, women's wages are only 70% of their male coworkers'.

METHOD

Data

The data I use for my analyses are taken from a database called Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA). LISA database presently holds annual registers since 1990 and includes all individuals 16 years of age and older that were registered in Sweden as of December 31 for each year. Thus, the data comprise working married adults residing legally in Sweden from 1989 who were aged between 18 and 65. These individuals are also tracked forward in time until 2002. These restrictions mean that some of those in the labor force in years before 1989 are not in the sample. The database integrates existing data from the labor market, educational and social sectors and is updated each year with a new annual register. The individual is the primary object in LISA, but connections to family (including parents, spouses, and siblings), companies and places of employment are also available. The connections to spouses, including married spouse, registered partner, and unregistered partner, allow me to identify spousal pairs.

Sample

From the database of LISA, I constructed a sample for my analyses according to five criteria.

First: because I'm interested in the effects of workplaces and family on spousal couples' involvements in entrepreneurship, my analyses concern two durations: the duration of an individual's employment in an organization, and the duration of an individual's marriage. The events that I expect to observe are wives' transitions into entrepreneurship and husbands'

transitions into entrepreneurship. Within the observation period of 1989 to 2002, both individuals' employment status and marital status may change. Because I want to track individuals back five years prior to the current year, I define the time of being at risk for a married working adult to become an entrepreneur is the first time he/she is employed by a new workplace between 1994 and 2002. [4] Because I choose 1994 as the earliest possible initial year of being at risk for occurrence of entrepreneurship, the data are left-truncated when they include individuals for whom the observation period starts after the first year of employment in a firm. These individuals are employees hired by firms founded in 1989 or before (presumably these firms were founded in 1989 to before). Some researchers have taken a more conservative approach to handle left-truncation by only including individuals who started their jobs in the first year of their observation period. Because knowing the initial time of being at risk of entering into entrepreneurship allows me to control for left-truncation, I choose a more inclusive sample by including employees whose first year of employment is from 1990 onwards. It is possible that wives and husbands became employed in the labor market at different time points. Because I want to follow individuals for at least 5 years, the time of being at risk for individuals and couples needs to be no later than 1997. Regarding the censoring time for couples when neither of husbands and wives became entrepreneurs, there are potentially three censoring time: (1) the last year of the observation period, the year of 2002; (2) the year when their marriage ends. It means that a couple will be no longer in my analysis from the year when their marriage ends; (3) the year since then both husbands and wives are no longer employed in the labor market. Whichever of the three came latest is the censoring time for spousal couples in which neither husbands nor wives became entrepreneurs.

[4] Because one of my key variables is the number of co-workers who had startup experience in the past five years, I need to be able to trace them back 5 years from the current year.

Second, because I'm interested in spousal couples' mutual influence given their employment, I excluded spousal couples in which either of husbands and wives were never employed from 1994 to 2002. It means that if either of husbands or wives were never employed from 1994 or 2002, both husbands and wives were completely excluded from the sample. Therefore, the sample does not include couples that were never dual-earner couples in the period of 1994 to 2002 (only 1% of spousal couples in the data are excluded by this criterion). Third, to obtain a complete employment history of an individual in his/her employer organization prior to transitioning into entrepreneurship, I excluded individuals who were hired by their employer organizations in 1989 or before 1989. Because these individuals' initial time of at risk for entrepreneurial entry is unknown, they cause left-truncation problem that can't be fixed in transition models. This step makes sure that employees are observed from their first year of working for an employer organization, the time when they are first at risk of leaving their employers for entrepreneurship.

These selection criteria resulted in an estimation sample of 647694 individuals from 323.847 married couples, and 2,995,018 individual-year observations.

Dependent Variable

Individual-level dependent variable

I follow previous research using similar datasets to measure transitions to entrepreneurship relying on a work status classification scheme that differentiates a variety of labor force attachments: (1) employment with established organizations, (2) unemployment, (3) not in the labor force, and (4) self-employment. Statistics Sweden recognizes both

unincorporated self-employment and incorporated self-employment.[5] Founders of incorporated ventures appeared as employees whereas the incorporated ventures appeared as employers. However, I treated individuals who were founders of incorporated ventures as entrepreneurs, self-employed in incorporated firms. Furthermore, following Sørensen (2007), I restricted my definition of entrepreneurs based on the size of employees in the founding year of a new business and a direct transition from employment to entrepreneurship. First, I assume that individuals who are self-employed in newly founded firms are entrepreneurs. Second, if an individual become unemployed between employment in one year and self-employment in the next, I do not identify it as transition from employment into entrepreneurship. Unlike Nanda and Sørensen (2010) treating employees working for new firms that have less than 3 employees as entrepreneurs, I only define self-employed people as entrepreneurs because the jobs that employees have in newly founded small firms are still wage jobs, which are fundamentally different than founding one's own new business.

Couple-level dependent variable

Based on a wife and a husband's entrepreneurial status (an entrepreneur or an employee), I code the co-entrepreneurship status for a spousal couple: neither of a spousal couple became an entrepreneur (=0, baseline), one of them, wife (=1) or husband (=2), and both of them (=3).

Independent Variables

Family-level variables:

[5] The data is based both on the statement of income to be provided to tax authorities for all persons who received remuneration or other benefits from employers and the data on declared income of active trade.

Married couples: the individual-level data differentiate 7 different marital statuses: unmarried, married, divorced, widow/widower, registered partner, separated partner, widow/widower (Partner). The spousal data include information on legal spouses and spouses who are not legally registered. I focus on married couples, couples registered as partners, and couples who are not registered but reported to the government as sambo (shortcut for sammanboende)-- couples living together but not married. In Swedish culture, sambo has a deeper meaning than cohabitation. It is used to describe two unmarried persons living together in a matrimonial manner, as a couple, in a joint household, without being married to each other (live-in partners). It has a similar meaning with the term Common Law husband / wife in English. Living together as "sambos" (samboförhållande – sambo relationship) is regulated in a law called "sambolagen" – "the law of cohabited living by couples". The Swedish cohabitation law is officially referred to as; Act 2003:376. On all official application forms there are three boxes for civil status; unmarried, married, and "sambo". "Sambo" in Sweden is both culturally and legally a stronger status of a spousal relationship than in other nations. Sambo with children is legally similar to married except for inheritance (i.e. ownership of house, apartment, etc). Because sambos with or without children can be commonly taxed so that they can be identified in the spousal data. [6]

Motherhood and Fatherhood: is measured the total number of children in a household. Considering that childcare responsibilities are often associated with younger kids, I further differentiate the number of children in 6 different age groups: 0-3, 4-6, 7-10, 11- 15, 16-17, and 18-19.

[6] About 15% of the sample of spousal couples are "sambos".

Deviant couples: measured by two indicators created based on husbands and wives' salary earnings. The first one is a dummy variable for deviant couples, 1 if wives earn more than husbands, 0 if husbands earn more than wives. The second one is a continuous variable, the difference between husbands' earnings and wives' earnings.

Industry types: based on the 5 digit industry codes, I categorized 7 industry types: Agriculture and Fishing, Manufacture, Construction, Wholesale, Finance and Business, Education and Health, and other services.

Individual level variables:

The data have two measures for education that can be converted to each other: First, the level of education: Six levels: (1) Compulsory schooling less than 9 years; (2) Compulsory schooling nine years (equivalent); (3) Secondary education; (4) Post-secondary education less than two years; (5) Post-secondary education two years or longer; (6) Graduate program. Second: years of education. Statistical Sweden and Swedish Council for Higher Education calculated years of education for each education code, which consists of information on the level of education and the type of education. I use years of education because it is more fine-grained measure than the level of education.

Seven other individual-level control variables are (1) age and age squared; (2) whether an individual received the highest degree in a university in Stockholm; (3) days of unemployment in a year; (4) gender; (5) whether an individual has created business before (a serial entrepreneur); (6) individual wage income; (7) fixed effects for the year when an employee was hired by the current employment.

Firm-level variables:

Prior Entrepreneurial Experience of the Focal Individual's Coworkers: is measured by

the number of the focal individual's colleagues who had ever been self-employed in the preceding five years. Whereas the first indicator emphasizes the extent of entrepreneurial experience that co-workers had in the past five years, the alternative measure emphasizes the intensity of peer network ties with prior entrepreneurial experience. To test my hypothesis concerning peer influence of male employees and female employees, I created the two indicators for male and female employees having prior startup experience, respectively.

Seven other firm-level control variables are: (1) the number of employees; (2) average salaries of employees, (3) the percentage of female employees; (4) the county where a workplace is located; (5) Founding year of a firm; (6) whether a firm has any currently self-employed people; (7) country fixed effects.

Analytical Strategy

My analytical strategy predicts a spousal couple's entrepreneurial status by the wife and husband's probability of becoming an entrepreneur that is estimated based on their own workplace conditions, and a set of household conditions that the spousal couple shares. The model is written as:

$$\boldsymbol{u_{ij} = \beta_m P_m + \beta_w P_w + \beta_h X_h + \epsilon_{ij}}$$

Where β_m, β_w represent the influence of the man's and the woman's propensity to become an entrepreneur (predicted by their own employment conditions, $P_m \; and \; P_w$) on the couple's joint entrepreneurial status. Whereas the neoclassical model implies that $\beta_m \; and \; \beta_w$ equivalently affect the spousal couple's co-entrepreneurship, sociological predictions suggest that β_m has a significant effect whereas β_w does not.

I use logistic regression to estimate a wife's and a husband's propensity to become an entrepreneur based on the condition of their workplaces, and I use multinomial regression to

estimate a spousal couple's joint entrepreneurship status. My estimate of each individual's propensity to become an entrepreneur includes all individual-level control variables concerning employment (9 variables) and firm level control variables (6 variables). The estimated propensity based on employment and firm characteristics will be used as an indicator to assess who is the "lead" entrepreneur and who is the follower within a spousal couple.

RESULTS

I first present descriptive results for individual employees, their families and their workplaces, I then test hypotheses regarding the conditions of workplaces and family households contexts on spousal couples' entrepreneurial entry.

Descriptive Results

Descriptive results of spousal couples' transition into entrepreneurs show a strikingly low transition rate of entrepreneurship and a high unemployment rate for married Swedish people. Among the 647,694 individuals, 2.35 % of men and 1.26 % of women in the sample have become entrepreneurs within the observation period (8 to 5 years, depending on the initial year of under observation). A snapshot of the distribution of individuals' employment status in a year during the observation period shows that on average about 80% of Swedish married men are employed in organizations, 1.6% of them are self-employed, and 18% of them are unemployed. Among married Swedish women, less than 1% of them are self-employed and roughly 20% are unemployed. The unusually high unemployment rates for married Swedish men and women in mid-1990s might be caused by the worst economic crisis in Sweden since the 1930s. "A restructuring of the tax system, in order to emphasize low inflation combined with an international economic slowdown in the early 1990s, caused the bubble to burst. Between 1990 and 1993 GDP (in Sweden) went down by 5% and unemployment skyrocketed, causing the

worst economic crisis in Sweden since the 1930s. According to an analysis by George Berglund published in Computer Sweden in 1992, the investment level decreased drastically for information technology and computing equipment, except in the financial and banking sector, the part of the industry that created the crisis... Total employment fell by almost 10% during the crisis." [7]

I also examined descriptive results regarding entrepreneurial entry at the level of spousal couples. Among the 323847 spousal couples, 98.76 % have no one ever transitioning to entrepreneurship during the observation period, and about 1.7% of spouse couples have wife or/and husband becoming entrepreneurs. Among the spousal couples in which wives or/and husbands become entrepreneurs, 52% only have husband becoming entrepreneurs, 20% have wife becoming entrepreneurs, and 28% have husband and wife co-entrepreneurs. In theory, spouses may join entrepreneurship as employees, so I also examined the percentages of spouse employees for individuals who have become entrepreneurs. Only 3% of businesses ran by a spouse have the other person working for the businesses as an employee. These results suggest that husbands and wives are more likely to share similar statues in their businesses, both becoming self-employed, rather than having differentiated statuses as employers and employees.

Table 1 presents descriptive results of individuals, family households and workplaces. The typical individual in my sample is 43 years old, having 13 years of education, earning about $ 36,000 a year. Regarding spousal couples, the average number of children in the Swedish families in my sample is 1.62. The median number of children in a household is 2. By looking at the number of children in 6 different age groups, I found that 29% of spousal couples have kids younger than 3 years, and about 30% have kids aged between 4 and 6. These results suggest that

[7] http://en.wikipedia.org/wiki/Economy_of_Sweden#cite_note-21

childcare responsibilities are highly relevant to most family households and may influence husbands and wives' decisions regarding their employment. I also noticed that about 20% of the family households in the sample have never had children under the observation period. The variability of the number of children among households allows for an investigation of the effects of motherhood and fatherhood on spousal couples' departures from market-based employment and their transitions into entrepreneurship.

With regard to firm characteristics, about 50% of individuals in my sample are employed in firms that have at least 5,677 employees. Half of individuals are employed in firms where at least 57% of employees are women. The average number of female employees in the focal individuals' workplaces is larger than the average number of male employees in their workplaces. These results are consistent with previous research findings that labor-force participation rates for Swedish women are quite high, especially those in health and education industries (Mandel and Semyonov 2005; Mandel and Semyonov 2006). Table 1 also reports the characteristics of workplaces. About one third of these individuals are employed in workplaces in finance and business industries, another quarter are employed in workplaces in education and health industries, 16% are employed in manufacture firms, and 2 % are employed in fishing and other personal services. The descriptive results about work peers having prior startup experience suggest that men on average have been involved in creating new business longer than women.

In Table 2, I examine the association between husbands and wives' personal attributes and the characteristics of their workplaces. First, the results show strong positive correlations between husbands and wives' socioeconomic attainment. Consistent with previous findings on educational assortative marriage, the correlation between wives and husbands' years of education is very high, 0.40 (Mare 1991; Schwartz and Mare 2005). Similarly, women's salaries are

positively correlated with their husbands', confirming previous results that income inequality among family households may be doubled as a result of educational assortative marriage and the rise of dual-earner families (Western et al. 2008). Second, husbands and wives tend to work in similar workplaces and industries. The correlations between husbands and wives' employment in industries are particularly high when they work in manufacturing, finance & business, and education and health industries. Among all the firm-level characteristics, husbands and wives' workplaces are most similar in employment size, and the number of employees with prior startup experience.

Figure 1 shows the distribution of the difference between husbands and wives' salary income. Even though there is a strong pattern of educational assortative marriage among spousal couples in Sweden and the correlation between husbands and wives' earning is quite large, the majority of spousal couples are male-breadwinner couples, and only 22 % of spousal couples have wives as the primary earners. In the 22 % of spousal couples that wives are the primary earners, on average, wives only make $ 14,000 a year more than their husbands. However, when men are the breadwinners, they generally make $ 30,000 a year more than their wives. These results are consistent with previous findings on gender deviance in earnings from analyzing data sets on American couples. Even though Sweden has been an exemplary corporatist society adopting public policies to rectify gender-stereotyped social roles for men and women, women are still making much less earnings than men in Sweden.

Model Results

I conduct analysis by two steps. First, I run multilevel logistic regression to examine gender difference in the rate of entrepreneurial entry, testing the effect of workplace size and peer influence of coworkers who have prior entrepreneurial experience. I then use the predicted

propensity of entrepreneurial entry for each husband and wife to examine how their propensity affects joint entry, depending on household conditions that strengthen gender roles in spousal relationships.

In Table 3, the baseline model (Model 1) that only includes the gender variable and control variables shows that after controlling for industries, the odds for male employees to become entrepreneurs are 44 % (=exp[0.364]) significantly higher than the odds for women employees. But the size of gender difference I found is much smaller than what have been shown in studies of Danish employees and American employees which include every individuals, not just married individuals.

In model 2 and model 3, I examine the effect of peer influence and individual human capital on employees' entrepreneurial entry. In model 2 where I added human capital variables, the odds ratio of the male coefficient almost remain the same, unchanged by controlling for human capital variables. The effects of human capital variables are quite consistent with previous findings. First, an individual's rate of transition to entrepreneurship increases by 11% as his/her years of education increase by one year. Second, age has a curvilinear relationship with entrepreneurial entry, suggested by the positive effect of age and negative effect of age squared. But the coefficient of age squared is very small, leading to a slow deceleration of the age effect. Finally, I also included the dummy variable, being employed in an organization versus being unemployed, in Model 2. The result suggests that employment substantially increases an individual's chance to become an entrepreneur than unemployment. Perhaps because the Swedish welfare state provides a safety net to citizens so that unemployment rarely leads to individuals' transitions to entrepreneurship.

Model 3 includes two additional variables, the natural logarithm of the number of employees and percentage of women employees. Both of the variables have negative effects on employees' likelihood of entering to entrepreneurship, but the natural logarithm of the number of employees has a much stronger effect. An increase of 10 employees leads to a reduction of 74% in an employee's chance to become an entrepreneur. This result confirms previous finding that bureaucratic organizations constrain employees' chances of discovering startup opportunities because they "influence the attitudes and mental dispositions of their employees in ways that make them less likely to enter entrepreneurship, and work in bureaucracies may hinder development of the skills necessary for successful entrepreneurship and may therefore lower the expected value of entrepreneurial opportunities."(Sørensen 2007). I also noticed that after controlling firm size, the odds ratio of gender in entrepreneurial entry substantially dropped from 44% to 6%. It suggests that Swedish women are less likely to become entrepreneurs than their male counterparts largely due to the fact that Swedish women are more likely to work in the public sector and health & education industries which are predominately large firms.

In hypothesis 1, I proposed that the differential returns to men and women's exposures to entrepreneurial peers exist among employees in established organizations. Results for this hypothesis are presented in Model 4- 6 in Table 4. I added the number of entrepreneurial peers in Model 4 but I split the variable into the number of female entrepreneurial peers and the number of male entrepreneurial peers in Model 5. Results in Model 4 suggest that the number of work peers having previous startup experience has significantly positive effect on employees' transition into entrepreneurship. Results from Model 5, where I separated the number of female entrepreneurial peers and the number of male entrepreneurial peers, show surprising findings: the number of female entrepreneurial peers seems has much larger effect on increasing employees'

entrepreneurial entry than the number of male entrepreneurial peers. In Model 6, I added the interaction of gender and the two peer influence variables. Results in Model 6 show that men employees are much more likely to become entrepreneurs than women when there are more work peers with prior startup experience at workplaces, regardless of whether these entrepreneurial peers are men or women. This result supports the hypothesis that men and women receive differential returns from being exposed to work peers having prior startup experience.

Next, I examine whether the magnitude of gender inequality in entrepreneurship due to the workplace size and work peers would be attenuated by strengthened gender expectations associated with motherhood and fatherhood. Following previous research, I have argued that in the field of entrepreneurship, motherhood shapes co-workers' expectations for women's heavy responsibility for childcare and their lower interest in starting new businesses. In addition, childcare responsibility at home consumes women's time that could be spent with work peers in their employer organizations, and thus constrains their exposure to people who started new business before. By contrast, fatherhood is associated with more ambitions for earning household income and expectations that men become more responsible for their behaviors in the labor market. Thus I expected to find a more pronounced gender difference in the effect of peer influence on men and women's probabilities to become entrepreneurs. I tested this hypothesis by first including the number of children in each age group and the propensity of entering into entrepreneurship for a husband and a wife, estimated based on workplace conditions. Because the couple-level dependent variable has 4 categories, no one has become an entrepreneur, a wife has become an entrepreneur, a husband has become an entrepreneur, and both, I use a multinomial logistic regression to test the conditions under which husbands and wives become

entrepreneurs together. Because the probability that an individual becomes an entrepreneur is small, I increased the unit of the two propensity variables by 100 times for easier interpretation of the results.

In Model 1 of Table 4, the results show that in general spousal couples are much more likely to have at least one person becoming entrepreneurs when there are more children younger than 3 at home. The effect of having more children younger than 3 is stronger on spousal couples' joint entrepreneurship than either husband or wife entering into entrepreneurship. In particular, a spousal couple's joint chance of becoming entrepreneurs increases by 43% when the number of children younger than 3 increases by 1, but the probability that only the husband becomes an entrepreneur increased by 5% and the probability that only the wife becomes an entrepreneur increased by 18% as the number of children younger than 3 increases by 1.

Table 5 presents results testing hypotheses 3, which predicts that gender deviance neutralization in spousal couples affects their entries into entrepreneurship. I proposed that in the setting of new businesses where tasks are male-stereotyped, deviant couples in which husbands earn less in the labor market than their wives will avoid working together in creating new ventures so as not to not further threaten their masculinity and femininity (Schneider 2012: 1033). Because stereotypical startups are highly profitable, creating new businesses may be seen as a way that allows for the husbands to correct for their gender deviance in earnings. The three coefficients compare the three groups of spousal couples that have at least one entrepreneurial person and the control group that neither of the husband and wife has become an entrepreneur. I did additional analysis testing spousal couples' joint entrepreneurship and the other two types of entrepreneurial entry (only one person becoming an entrepreneur). My results support that in dual-earner married couples, gender deviance in socioeconomic attainment in the labor market

would deter husbands and wives' joint involvement in new businesses. In particular, deviant couples are most likely to have husband becoming entrepreneurs, and least likely to have wife becoming entrepreneurs. The chance that husbands and wives both transitioning entrepreneurship is between the two.

A further examination of the industries where new businesses are created suggest that deviant couples are less likely than normal couples to simultaneously become entrepreneurs, regardless of whether the couples are starting new businesses in traditional industries or not.

DISCUSSION

My study provides strong evidence for the effects of social networks at places and family-embedded gender logic on shaping gender inequality in entrepreneurship. Unlike previous research examining family household conditions and organizational conditions respectively, I examine both family context and organizational context to explain gender inequality in entrepreneurial entry. My results show that women employees are less likely than their male counterparts in employer organizations to become entrepreneurs, because they benefit less from peer influence at work and they face stronger normative barriers in the household context to entering into entrepreneurship.

An important organizational mechanism concerning peer influence is that women employees have less access to work peers who have had startup experience. Two conditions allow this mechanism to disadvantage female employees in transitioning into entrepreneurship: First, sex segregation in interpersonal networks among employees; Second, there are more male employees in workplaces that have previous startup experience. Even when there are same numbers of male and female employees having prior startup experience, women are still less likely to learn information and skills from their entrepreneurial peers because of the differential

returns to men and women's social ties to their work peers. To the extent that there are more male employees having startup experience in workplaces, gender inequality in entrepreneurship is self-perpetuated as some entrepreneurs become employed in established organizations again. They pass more knowledge and information to their male peers than female peers. It means that sex segregation in personal networks among work peers at established organizations and male-dominance in entrepreneurship jointly perpetuate gender inequality in entrepreneurship. This finding suggests that established organizations serve as conduit for job mobility and the context for sustaining inequality generated in the process of employment mobility.

I also found that family household conditions influence men and women's entries into entrepreneurship by moderating individuals' exposures to peer influence by three mechanisms: expectations associated with motherhood and fatherhood, the male-dominance logic in husbands and wives' mutual influence, and gender deviance neutralization of spousal couples. First, motherhood and fatherhood shape the work peers' expectations for men and women's probabilities to become entrepreneurs, and their own self-fulfillment of responsibilities for work and family. Second, knowledge spillover about startups between husbands and wives is driven by a male- dominant logic rather than a gender-neutral logic so that wives would face normative barriers to convincing their husbands to join them for creating new businesses. My results support my argument that whereas peer influence at husbands' workplaces affects spousal couples' joint involvement in entrepreneurship, peer influence at wives' workplace predicts only wives' involvement in entrepreneurship. It means that wives' possibilities to become entrepreneurs are highly dependent on their husbands' chances to become entrepreneurs, whereas husbands' entrepreneurial status is relatively independent of their wives'.

Third, the gender deviance neutralization mechanism also applies in the setting of new businesses. Because entrepreneurial tasks are male-stereotyped, deviant couples in which husbands earn less in the labor market than their wives will avoid working together in creating new ventures so as not to not further threaten their masculinity and femininity (Schneider 2012: 1033). Because stereotypical startups are highly profitable, creating new businesses is likely to been seen as a way for the husbands to correct for their gender deviance in earnings. While deviant husbands take the opportunity to demonstrate that they earn more household income, deviant wives choose to stick to their market-based employment so as not to violate husbands' independent involvement in new businesses. My analyses of the married couples in Sweden provide strong evidence that gender deviance in socioeconomic attainment in the labor market affects husbands and wives' involvement in new businesses. This finding extends the literature on gender deviance into a field that has rarely been studied.

CONCLUSION

Sociologists have long recognized family as an important institution in modern societies, especially when it comes to explaining social disparities between men and women. First, scholars taking a structuralism view have theorized family as a basic unit for understanding social stratification because it distributes income from individuals' employment in the labor market among family members (Parsons and Bales 1955). Second, scholars taking a cultural perspective have emphasized that family is the context under which cultural beliefs about gendered become perpetuated and sustained (Berk 1985; Ridgeway 2011). Third, researchers taking an interactional perspective have posited that family is one of the most important contexts within which individuals engage in gender-typical activities to display their masculinity and femininity. Despite the recognition of the importance of family in shaping gender inequality,

sociologists have not systematically examined the effects of family in shaping gender inequality when husbands and wives are jointly involved in economic production. As Martinize and Aldrich (2014) have argued, "sociologists tended to separate the study of production, mostly performed through firms in modern society, from the study of reproduction, involving studies of the family as a socializing and stabilizing institution" (Yanagisako and Collier 2004). In my research, I build the connection between studies on economic production and social reproduction by examining the joint effects of workplaces and family on spousal couples' involvement in entrepreneurship.

I developed my theoretical framework by synthesizing the literature on employee entrepreneurs, the literature on family businesses, and the literature on gender inequality. Recent studies on employee entrepreneurs have demonstrated that established organizations have substantial effects on entrepreneurship (Audia and Rider 2006; Sørensen 2007; Sørensen and Fassiotto 2011). Research on family businesses has demonstrated that family households are influential for shaping entrepreneurship, as manifest in the remnants of household-based production in the small business sector of the economy, i.e., family members collectively engage in direct cooperation in family enterprises (Aldrich and Cliff 2003; Budig 2006a; Carr 1996; Sanders and Nee 1996). To unpack the mechanisms by which social dynamics at workplaces and gender relations at home jointly shape gender inequality in entrepreneurship, I simultaneously investigate wives and husbands' transitions into entrepreneurship, taking into account their separate employment in the labor market and their joint household conditions.

My analyses of married working adults in Sweden from 1994 to 2002 suggest that women's chances to become entrepreneurs are constrained by their access to entrepreneurial peers at workplaces. Meanwhile, the differential effects of work peers on men and women's

likelihood of becoming entrepreneurs are substantially moderated by men's dominance in spousal relationships, the relative comparative advantage of spousal couples' earnings, and the presence of children in the households. My results show that family-embedded gender logic interacts with social dynamics at workplaces to shape gender inequality in entrepreneurship.

Table 1. Descriptive Results of Individuals, Family Households and Firms			
Variable	**Mean**	**Median**	**Std Dev**
Husband-to-wife income difference ($ 1,000)	20.12	15.47	44.24
# of Kids aged (0 – 3)	0.29	0	0.54
# of Kids aged (4 -6)	0.3	0	0.52
# of Kids aged (7-10)	0.38	0	0.62
# of Kids aged (11-15)	0.35	0	0.63
# of Kids aged (16-17)	0.1	0	0.31
# of Kids aged (18-19)	0.19	0	0.47
Total # of Children	1.6	2	1.1
Year of Getting Married			
<=1994	84.43		
1995	5.6		
1996	5.08		
1997	4.9		
Age	42.79	41	10.38
Years of Education	12.65	12.5	2.54
# of Days in Unemployment in a Year	11.29	0	42.95
Salary Income ($ 1,000)	36.13	31.7	36.53
Have prior startup exp	0.03	0	0.17
Firm Level			
# of Employees	5,677	1,035	11,034
# of Male Employees	1,802	318	3,676
# of Female Employees	3,875	541	8,530
Percent of Female Employees	0.54	0.57	0.28
Avg. Salary Income of Employees	32	30	15
Number of currently Self-employed	0	0	1
# of Employees having Startup Exp	56	14	106
# of Male Employees having Startup Exp	21	5	38
# of Female Employees having Startup Exp	35	5	74
Female Employees' Years of Startup Exp	0.42	0.42	0.34
Male Employees' Years of Startup Exp	1.79	2.32	1.3
Agriculture & Fishing	0.02		
Manufacture	0.17		
Construction	0.03		
Wholesale	0.07		
Finance & Business	0.33		
Education & Health	0.34		
Other Service	0.04		

Table 2. Correlations of Husbands and Wives' Personal Characteristics and Workplace Characteristics

Firm Characteristics	
# of Female Employees	0.2
# of Male Employees	0.3
# of Employees having Startup Exp	0.20
Employees' Years of Startup Exp	0.12
# of Male Employees having Startup Exp	0.21
Male Employees' Years of Startup Exp	0.13
# of Female Employees having Startup Exp	0.20
Female Employees' Years of Startup Exp	0.13
# of Employees	0.20
Personal Characteristics	
Salary Income	0.20
Transition to Entrepreneurs	0.11
Years of Education	0.40
Industries	
Agriculture & Fishing	0.1
Manufacture	0.2
Construction	0.1
Wholesale	0.1
Finance & Business	0.2
Education & Health	0.2
Other Service	0.2

Figure1.Distribution of the Difference between Husbands and Wives' Income

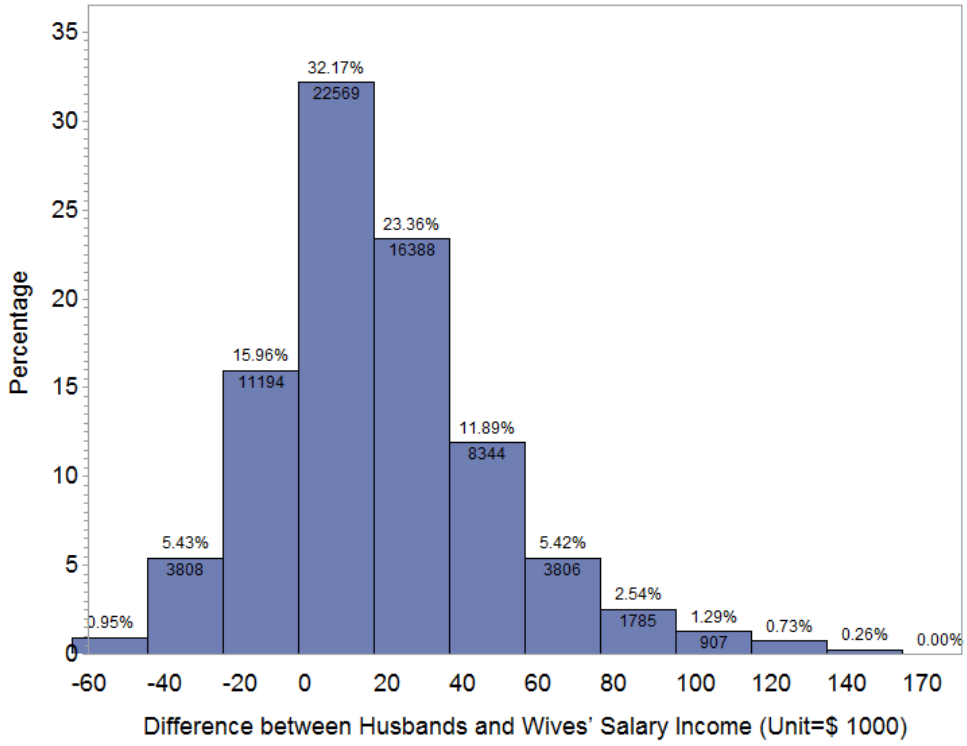


Table 3. Gender Difference in Entrepreneurial Entry: Effects of Individual level and Firm Level

	Model 1		Model 2		Model 3	
Parameter	**B**	**P**	**B**	**P**	**B**	**P**
Intercept	-5.371	<.0001	-10.738	<.0001	-9.835	<.0001
	(0.019)		(0.098)		(0.103)	
Male (=1)	0.364	<.0001	0.363	<.0001	0.058	<.0001
	(0.006)		(0.006)		(0.008)	
# of self-employed* Male						
Years of Education			0.104	<.0001	0.104	<.0001
			(0.003)		(0.003)	
Age			0.188	<.0001	0.173	<.0001
			(0.004)		(0.004)	
Age Squared			-0.002	<.0001	-0.002	<.0001
			(0.000)		(0.000)	
Salary Income ($ 1,000)			-0.027	<.0001	-0.011	<.0001
			(0.000)		(0.000)	
Have prior startup exp			3.765	<.0001	2.709	<.0001
			(0.012)		(0.014)	
Employed in an Org			1.584	<.0001	3.242	<.0001
(Ref=unemployed)			(0.032)		(0.034)	
Log num of employees					-0.579	<.0001
					(0.004)	
Percentage of Women					0.000	<.0001
					(0.000)	
(Ref=Other Services)						
Agriculture & Fishing	2.438	<.0001	1.038	<.0001	1.178	<.0001
	(0.021)				(0.036)	
Manufacture	-0.244	<.0001	-0.687	<.0001	-0.337	<.0001
	(0.023)				(0.033)	
Construction	1.075	<.0001	0.216	<.0001	-0.256	<.0001
	(0.026)				(0.036)	
Wholesale	1.121	<.0001	0.216	<.0001	-0.109	0.0004
	(0.021)				(0.031)	
Finance & Business	0.853	<.0001	0.170	<.0001	0.303	<.0001
	(0.016)				(0.028)	
Education & Health	-0.178	<.0001	-1.019	<.0001	0.735	<.0001
	(0.021)				(0.032)	
AIC	408085		293621		234954	
-2 Log L	408069		293593		234922	
obs	3243606		3243606		3243606	

Table 4. Gender Difference in Entrepreneurial Entry: Effects of Individual level and Firm Level Conditions

Parameter	Model 4 B	P	Model 5 B	P	Model 6 B	P
Intercept	-9.712	<.0001	-9.555	<.0001	-9.553	<.0001
	(0.105)		(0.105)		(0.105)	
Male (=1)	0.114	<.0001	0.164	<.0001	0.094	<.0001
	(0.008)		(0.008)		(0.009)	
# of self-employed* Male					0.065	<.0001
					(0.005)	
Log # of women employees having prior ent exp* Male					0.019	0.1856
					(0.014)	
Log # of men employees having prior ent exp* Male					0.031	0.0482
					(0.016)	
Years of Education	0.102	<.0001	0.098	<.0001	0.097	<.0001
	(0.003)		(0.003)		(0.003)	
Age	0.174	<.0001	0.170	<.0001	0.170	<.0001
	(0.004)		(0.004)		(0.004)	
Age Squared	-0.002	<.0001	-0.002	<.0001	-0.002	<.0001
	(0.000)		(0.000)		(0.000)	
Salary Income ($ 1,000)	-0.011	<.0001	-0.009	<.0001	-0.009	<.0001
	(0.000)		(0.000)		(0.000)	
Have prior startup exp	2.117	<.0001	2.241	<.0001	2.237	<.0001
	(0.017)		(0.016)		(0.017)	
Employed in an Org	3.223	<.0001	3.337	<.0001	3.391	<.0001
(Ref=unemployed)	(0.035)		(0.035)		(0.035)	
Log num of employees	-0.908	<.0001	-0.965	<.0001	-0.962	<.0001
	(0.007)		(0.008)		(0.008)	
Percentage of Women Employees	0.000	<.0001	0.000	<.0001	0.000	<.0001
	(0.000)		(0.000)		(0.000)	
# of currently self-employed	0.150	<.0001	0.179	<.0001	0.152	<.0001
	(0.004)		(0.004)		(0.005)	
Log # of employees having prior ent exp	0.873	<.0001				
	(0.015)					
Log # of men employees having prior ent exp			0.374	<.0001	0.332	<.0001
			(0.016)		(0.017)	
Log # of Women employees having prior ent exp			0.857	<.0001	0.888	<.0001
(Ref=Other Services)			(0.015)		(0.016)	
Construction	-0.313	<.0001	-0.264	<.0001	-0.263	<.0001
	(0.038)		(0.038)		(0.038)	
Wholesale	-0.160	<.0001	-0.143	<.0001	-0.141	<.0001
	(0.032)		(0.032)		(0.032)	
Finance & Business	0.111	0.0001	0.163	<.0001	0.164	<.0001
	(0.029)		(0.029)		(0.029)	
Education & Health	0.387	<.0001	0.284	<.0001	0.309	<.0001
	(0.034)		(0.034)		(0.034)	
AIC	226229		224290		224008	
-2 Log L	226193		224252		223964	

TABLE 5. Spousal Couples' Transitions into Entrepreneurship: 1949 - 2002 in Sweden (Obs=1,621,803 couples)

	Model 1						Model 2					
Parameter	**Only Husband**		**Only Wife**		**Both**		**Only Husband**		**Only Wife**		**Both**	
	B	**P**	**B**	**P**	**B**	**P**	**B**	**P**	**B**	**P**	**B**	**P**
Intercept	-5.962	<.0001	-7.157	<.0001	-9.103	<.0001	-5.864	<.0001	-7.228	<.0001	-9.057	<.0001
	(0.021)		(0.040)		(0.092)		(0.022)		(0.044)		(0.094)	
Deviant Couples*							0.287	<.0001	-0.136	<.0001	0.122	0.0255
							(0.012)		(0.030)		(0.055)	
# Kids												
age (0 – 3)	0.046	0.0266	0.167	<.0001	0.355	<.0001	0.102	<.0001	0.144	0.0002	0.379	<.0001
	(0.021)		(0.038)		(0.080)		(0.021)		(0.038)		(0.081)	
age (4 -6)	0.137	<.0001	0.225	<.0001	-0.071	0.4645	0.154	<.0001	0.213	<.0001	-0.061	0.5317
	(0.022)		(0.041)		(0.098)		(0.022)		(0.041)		(0.097)	
age (7-10)	0.069	0.0007	-0.010	0.8056	-0.171	0.0606	0.083	<.0001	-0.019	0.6295	-0.164	0.0721
	(0.020)		(0.039)		(0.091)		(0.020)		(0.039)		(0.091)	
age (11-15)	-0.062	0.004	-0.030	0.4613	-0.261	0.0069	-0.055	0.0107	-0.037	0.3577	-0.256	0.008
	(0.022)		(0.041)		(0.097)		(0.022)		(0.041)		(0.097)	
age (16-17)	-0.104	0.0142	-0.310	0.0003	-0.348	0.0508	-0.107	0.0113	-0.318	0.0002	-0.339	0.0564
	(0.042)		(0.086)		(0.178)		(0.042)		(0.086)		(0.178)	
age (18-19)	0.025	0.352	0.020	0.6981	-0.317	0.0091	0.018	0.5119	0.017	0.7423	-0.318	0.0089
	(0.027)		(0.051)		(0.121)		(0.027)		(0.051)		(0.121)	
Wife's Propensity	-0.001	<.0001	0.002	<.0001	0.001	<.0001	-0.001	<.0001	0.002	<.0001	0.001	<.0001
	(0.000)		(0.000)		(0.000)		(0.000)		(0.000)		(0.000)	
Husband's propensity	0.001	<.0001	-0.001	<.0001	0.001	<.0001	0.001	<.0001	-0.001	<.0001	0.001	<.0001
	(0.000)		(0.000)		(0.000)		(0.000)		(0.000)		(0.000)	

Note: A comparison of the three deviant coefficients suggests that they are all significantly different from each other.

CHAPTER THREE: BUILDING ROUTINES IN EMERGING ORGANIZATIONS: THE EFFECTS OF EMPLOYERS AND EMPLOYEES' PRIOR WORKPLACES

Understanding the process of organizational emergence has long been important for theorizing organizations. Since the 1960s, organizational scholars have begun to theorize the conditions that shape the foundings of organizations. A classic approach, typified by perspectives in the entrepreneurship literature, emphasizes entrepreneurial founders and their personal attributes (Aldrich and Waldinger 1990). An alternative approach, typified by theories in the sociology literature, focuses on environmental contexts in which organizations are founded (Aldrich 1979; Johnson 2007; Steinmetz and Wright 1989; Stinchcombe 1965). Over the past four decades, as research into organizational emergence became more developed along these two lines, researchers have begun to pay more attention to the connections between the founders and the environmental context.

Among the many attempts linking entrepreneurial founders and their founding contexts, a fruitful stream of research has been investigating the genealogical process of organizations emergence in which new firms originate from existing organizations (Agarwal et al. 2004; Audia and Rider 2010; Brittain and Freeman 1980; Freeman 1986; Klepper 2001). In a genealogical framework, Phillips (2002) argued that entrepreneurs' knowledge about how to run businesses is largely obtained (consciously or unconsciously) from their prior work experiences. Based on the observation that the vast majority of entrepreneurs have had work experiences in established organizations, Sørensen and Fassiotto (2011) theorized that "organizations are fonts of entrepreneurship" such that the components and tools that entrepreneurs draw on to build new

firms are shaped by their employer organizations. A core proposition regarding the genealogical process of organizational emergence is that entrepreneurs transfer knowledge and routines from previous workplaces to build their new firms. Empirical evidence in support of the close connections between founders' previous workplaces and their new firms has been found in research on a variety of groups, including scientist entrepreneurs (Stuart and Ding 2006; Zucker and Darby 2006), executive managers(Sørensen 1999; Stuart and Sorenson 2003b), and employees of various industries (Audia and Rider 2010; Sorenson and Audia 2000).

While research tapping into the genealogical process of organizational emergence has contributed to the middle-level theories bridging organizational actors and the social contexts, two questions remain underexplored. First, scholars have neglected organizational actors who might be minor figures compared to entrepreneurial founders, but nonetheless are involved in shaping new firms (Ruef 2010: Chapter4). One of the groups of actors who have been rarely studied by previous research is the group of employees. In theoretical development, scholars have focused on entrepreneurial founders, assuming the founders to be the primary (or the solo) forces driving the development of new organizations (Alvarez and Barney 2005; Bird 1988; Shane 2002). In empirical studies, most researchers have treated initial hiring and subsequent recruitment as temporary outcomes achieved by startups (Barron et al. 1994; Greve 2008). Indeed, organizational emergence is a process in which entrepreneurial founders take on elements from their contexts to construct organizations (Aldrich 2009; Johnson 2007). A crucial element that entrepreneurs draw on from their environment is employees (Aldrich and Ruef 2006: 93; Scott and Davis 2007: 152). Once recruited, employees join the founders to create new organizations and exert influences on organizations' structures and performances. Even though employers may hire employees that resemble workers in the employers' previous jobs, the

effects of transferring routines may be contingent on the broader environmental contexts.

Second, scholars have paid little attention to the contingencies existing at multiple levels that may moderate the effect of transferred routines. Although researchers have convincingly argued that entrepreneurs transfer routines from existing organizations to their new firms (Phillips 2002), less effort has been directed at revealing the conditions under which the transferred routines effectively improve new firms' performance. A few researchers have suggested that the routines that entrepreneurs learn from parent firms might not be favorable for the new firms, under scenarios when there is competition between them and when the routines had led to the failure of parent firms (Phillips 2005; Sørensen 1999). However, a more nuanced understanding of the conditions under which routines influence new firms' performance requires a systematic depiction of the environmental conditions under which new firms are founded.

In this chapter, I address the two underexplored areas by investigating how founders and their recruited employees jointly create new businesses, contingent on the founding context of new businesses. I argue that an important dimension of developing routines and delineating boundaries is manifest in entrepreneurs' selections of employees from their local labor markets (Scott 2008). Once recruited, employees join the founders to create new organizations and exert influences on organizations' structures and performances. Even though entrepreneurs largely follow the blueprints they learned from prior employer organizations to recruit employees, the effects of transferring routines may be contingent on the founding conditions surrounding the new businesses.

THEORETICAL FRAMEWORK

Organizational scholars have conceptualized routines as grammars of actions in organizations (Nelson and Winter 1982; Pentland 2003; Pentland and Feldman 2005). For

organizations that are still on their way to become fledging entities, routines largely determine the resources that entrepreneurs take on from their environments and the procedures that entrepreneurs use to construct new firms (Aldrich and Yang 2012). In early works on entrepreneurship, scholars have implicitly emphasized that routines regulate the interplay between entrepreneurs and their environment. Following Aldrich (Aldrich 1979), McKelvey (1982: 115) defined an organization as a "myopically purposeful boundary-maintaining activity system…in environments imposing particular constraints". Similarly, Katz and Gartner (1988) argued that entrepreneurs engage in patterned actions involving resources, boundary-developing, and social exchanges with other actors in their environments.

More explicitly, Aldrich and Ruef (2006) theorized routines as one of the three important dimensions of organizations. In their three-dimensional framework, while resources refers to the building blocks of organizations (Katz and Gartner 1988; Wernerfelt 1984), boundaries reflect the extent to which emerging organizations become independent identities (Santos and Eisenhardt 2005), routines are the ways by which organizational actors accomplish work, including processing resources and developing boundaries (Feldman and Pentland 2003; Nelson and Winter 1982). This understanding of organizations and their routines is compatible with organizational theories that view organizations as open-natural systems subject to environmental influences (Scott and Davis 2007: 115). In line with these theories, I view routines as an important dimension of organizational emergence, and I emphasize the aspect of routines that shapes the ways by which entrepreneurial founders take on resources from environments and build organizations' boundaries (Amburgey et al. 1993; Hannan and Freeman 1984; Nelson and Winter 1982; Phillips 2002).

Routines as Grammars of Action: Collective Nature and Context-dependent

Organizations' blueprints are largely manifest in their employment systems and governance structures of their affiliated members (Baron et al. 1996; Baron et al. 1999). Population ecology and resource dependence theory emphasize that routines are the ways entrepreneurs use to mobilize resources, and that employees are among the most important resources that new organizations need to employ from their environments (Baron 1984; Feldman and Pentland 2003; Pfeffer and Salancik 1978). From the institutionalism perspective that emphasizes routines as the blueprints by which new firms construct boundaries, the most crucial components that new organizations rely on to compose their identities are employees (Kalev et al. 2006; Santos and Eisenhardt 2005). As resources and affiliated members representing firms' identities, employees are elements taken on by entrepreneurs from their environment but become part of the new organizations once they are recruited. Therefore, to understand the role of routines in shaping the interplay between emerging organizations and their environments, I pay close attention to the process of developing routines involving employees.

During organizational emergence, routines lead to recurrent patterns of actions but also evolve from stable sequences of actors' interactions (Becker 2004; Zollo and Winter 2002). The simultaneous process of developing routines for new businesses consists of two complementary stages: transferring routines from existing organizations and collectively enacting routines. At the first stage, entrepreneurs transfer routines from existing organizations to new firms (Phillips 2002). They not only carry over knowledge regarding organizational structures but also transfer knowledge about what particular kinds of employees they should recruit. At the second stage, as new members are recruited to new businesses, routines are developed and reproduced as group members make collective efforts. Two properties of routines, one at each stage -- the incompleteness property of transferring routines and the collective nature of enacting routines --

are important for my theorizing of the conditions under which routines have positive effects on new firms.

Collective Nature of Routines

Some scholars have explicitly differentiated individual habits and skills from organizational routines. Unlike habits and skills possessed by individuals, routines are collective phenomena that involve multiple actors (Becker 2004; Kogut and Zander 1992; Nelson and Winter 1982). At the beginning of the organizational founding process, entrepreneurs transfer the knowledge and skills they learned from previous workplaces to the new firms. They also carry over some abstract notions of organizational forms to the new firms. In the process of building new organizations, specific personnel need to be selected to fill the positions in organizational structure, and interactions of group members are required in transforming individual previous experience and knowledge to organizational properties (Cohen et al. 1996; Winter 1994). As Zollo and Winter (2002: 341) have argued, "important collective learning happens when individuals express their opinions and beliefs, engage in constructive confrontations and challenge each other's viewpoints." Founders and employees' collaborative behaviors and exchanges of opinions may help founders build organizations' routines.

Empirical studies have provided some evidence revealing the importance of group-level interactions (Argyris 1999; Edmondson et al. 2001). For example, by studying routine disruptions, Weick (1990) demonstrated that organizational routines would be disrupted if individuals simply act in a personal manner rather than cooperate with others. Similarly, by studying technology implementation in hospitals, Edmondson et al. (2001) showed that collective learning among team members is the key to successfully developing routines in existing organizations. Following the same logic, employees' cooperation with founders may

largely determine the extent to which founders' blueprints can be successfully transplanted in new firms.

Context-dependence of the Effects of Routines

When organizational routines are transferred across contexts, they are often incompletely specified, i.e. missing certain original components. As indicated by the notions of "scaffolded action" (Clark 1997) and "situated action" (Suchman 1987), routines are embedded in an organization and thus are specific to the original context. When transferred from the original context to a new organization, several kinds of specificity restrict the complete transfer of routines, such as historical specificity (Barney 1991; Hodgson 2001), local specificity (Simon 1976), and relation specificity (Dyer and Singh 1998). Due to the constraining effects of these specificities, the limited transferability of routines across different contexts makes a universal best practice virtually nonexistent. As a consequence, only local best solutions can be possibly achieved. Because routines can only be imperfectly transferred, Kogut and Zander (1992) argued that a combinative capability -- synthesizing transferred knowledge but also learning and creating new knowledge -- is crucial for organizations to succeed in competitive environments.

Given the collective nature and context-dependent property of routines, founders' transfer of the blueprints from their previous workplaces only constitutes an initial part of the organizational emergence process. The extent to which effective routines can be developed for new organizations is influenced by (1) founder-employee cooperation in the workplaces, and (2) the founding context of the new firm.

HYOTHESES

Several conditions matter substantially for the extent to which locally optimal solutions can be achieved to build routines in new firms. The first set of conditions concerns the extent to

which entrepreneurial founders recruit employees with whom they can collectively build and enact routines. From a learning perspective, routinization and implementation would be faster and easier when social actors have developed a common perspective, expectations, and approaches to problem solving from prior joint work experience (Beckman 2006). This argument leads to my first hypothesis regarding the positive effect of founders' joint or similar work experience on developing routines effective for new firms' performance. I propose that a new business' performance is the best, intermediate, and lowest, when founders and employees are from the same prior workplaces, similar workplaces and workplaces that are very different. It means that:

H1. *The more similar founders' previous workplaces are to employees' previous workplaces, the better performance new firms will have.*

The second set of conditions concerns the extent to which members' workplaces and the new firms are under somewhat homogeneous environments (Becker 2004; Hill and Hwang 2006; Kogut and Zander 1992; Kogut and Zander 1993). Gathmann and Schoenberg (2007) noted that the concept of task specific skills is different from that of occupation-specific skills and implies that highly skilled workers retain their advantages only if they move into new positions making use of such skills. Their view suggests that nascent entrepreneurs benefit the most when they attempt to start businesses in industries where they already have a substantial depth of experience. While nascent entrepreneurs' prior industry experience may help new businesses succeed their very early lifetime, employees' prior industry experience may matter more for new firms' subsequent performance.

I propose a set of two hypotheses:

*H2a. The more similar the industrial contexts of **founders**' previous workplaces are to the new*

firm, the stronger the hypothesized effect in H1 of the effect of employer-employee prior workplace matching.

*H2b. The more similar the industrial contexts of **employees'** previous workplaces are to the new firm, the stronger the hypothesized effect in H1 of the effect of employer-employee prior workplace matching.*

A caveat of the causal effect of founders and employees' joint/similar workplaces

The positive effect of founders and employees' joint or similar workplaces may reflect founders' capability of successfully recruiting employees from same or similar workplaces. Previous research has suggested that the practice of recruiting employees for new businesses is laden with complex challenges that involve competition with established organizations (Aldrich and Fiol 1994; Stinchcombe 1965). Because skills to a large extent are industry-specific, new ventures often compete with establishments in the same industries for employees equipped with the right skills (Bhide 2000; Caves 1998; Davis et al. 2007).

At least three disadvantages of new firms hinder their early efforts to attract scarce labor. First, emerging organizations suffer a heightened risk of failure because many of them have insufficient resources, lack legal recognition of potential customers and favorable terms with suppliers (Aldrich and Auster 1986; Kim and Aldrich 2011; Ruef 2002; Singh et al. 1986; Stinchcombe 1965). New firms' precarious life chances impose risks on employees' job prospects, and raise potential employees' suspicion regarding their employment in new firms when compared to their jobs in established workplaces (Stuart and Sorenson 2005). Second, the well-established "firm size wage effect" (FSWE) in research on social stratification posits that larger organizations offer better pay than small firms, most of which are newly founded ventures (Hollister 2004; Kalleberg and Buren 1996). It suggests that new firms are endowed with limited

financial capital, thus face great challenge to offer better pay in attracting skilled employees. Third, new firms have flatter structures and less-defined division of labor, so that employees in small firms encounter not only economic insecurity but also a limited chance of upward mobility (Kalleberg 2011). The three disadvantages constrain new businesses' chances to recruit ideal employees. From the standpoint of entrepreneurs, under the condition that intense competition for employees constrains their opportunity to recruit skilled labor, entrepreneurs are predisposed toward tapping into their social networks to recruit employees from their direct or indirect personal ties. It means that, by default, entrepreneurs prefer hiring from their own networks.

Given entrepreneurs' preferences for recruiting employees from their previous workplaces, their chances of successful recruitment are dependent on their work peers' perception of their new businesses' success. In a market-based exchange system, an information asymmetry exists between employers and employees (Stuart and Sorenson 2005). Whereas entrepreneurs have superior knowledge about their startups, employees know better about their own skills and abilities. Such an information asymmetry increases the risks for both entrepreneurs and potential employees because entrepreneurs may intentionally overstate the job prospect that they could provide whereas potential employees may exaggerate how much their skills would benefit startups' performance (Akerlof 1970; Amit et al. 1990). However, when entrepreneurs place their search for employees in the context of their prior workplaces, prior connections between them and their coworkers and the shared overlapping social networks reduce risks imposed by asymmetric information. This argument justifies the assumption that controlling for everything else, work peers are more likely to join entrepreneurs in working for new businesses if they perceive the entrepreneurs as highly competent.

Thus, the positive effect of founder-employee similarity of previous workplaces may be

endogenous to better performance of new businesses if employees from founders' prior workplaces join the new businesses when they perceive the new businesses' success to be more promising.

RESEARCH DESIGN

The data I use for my analyses are taken from a database called Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA). This database has a number of features that makes it suitable for research on "employee startups": startups founded by people who were employees of established organizations. First, it has a wide coverage of individuals in Sweden: LISA presently holds annual registers since 1989 and includes all individuals 16 years of age and older that were registered in Sweden as of December 31 for each year. Second, LISA has rich information on labor market status, as it tracks the firm, industry, and region that an individual works in, as well as their employment status. In addition, the database has a variety of other individual characteristics that serve as important controls in studies of entrepreneurship (such as their age, educational qualifications, annual income, wealth, marital status, and number of children). Third, LISA is longitudinal panel data that track employees from 1989 to 2002. It allows me to examine the causal mechanisms that explain the process of individuals' transitions into entrepreneurship, rather than just observing a snapshot of the phenomena or describing a correlation between entrepreneurship and explanatory factors. Finally, LISA is a matched employer-employee database, which allows me to identify which individuals work in same establishments. The matched employer-employee feature, combined with the panel data feature that track individuals' career histories, makes it possible to examine how former entrepreneurs affect their work peers' transitions into entrepreneurship.

Sample

I construct the sample for my analysis based on LISA. The research design for my study must allow me to observe (1) individual career histories prior to current employment in established organizations, (2) employees' transitions into entrepreneurship, and (3) the employees that entrepreneurs hire for their new businesses. Because I want to trace employees back five years from the current employment, I choose 1995 as the earliest possible founding year of a new business. Because I want to follow new businesses for long enough to observe how and when they hire employees, I choose 1997 as the latest possible founding year. These decisions lead to a sample of 4 cohorts of new businesses (1995, 1996, and 1997) which are at risk of hiring employees between 1995 and 2002. I restricted the sample of new firms to be independent new firms founded by solo entrepreneurs or entrepreneurial teams, because my theoretical focus is on entrepreneurial founders and their employees. Franchises, which on average have much more employees, are excluded from my sample.

For each new business, I use the matched employer-employee data to find information on (1) the employment histories of entrepreneurial founders and their employees, (2) characteristics of previous workplaces for employers and employees, and (3) properties of the industries where founders' previous workplaces and the new firms are located. I made a further restriction of the sample of new firms based on the number of self-employed people and the number of employees. Both of the two variables are highly negatively skewed because 99.9% new firms have less than 5 self-employed people and 0.1% of new firms have more than 5 self-employed, and 99.5% of new firms have 20 or less than 20 employees and 0.5% of new firms have 20 to 115 employees. Including the extremely large new businesses makes computation of the similarity variables for each pair of entrepreneur-employee cumbersome. Thus, I restricted

the sample to new businesses that have 1-5 self-employed and 0-20 employees. New firms that do not have any employees are included for comparison purposes.

Measures

Dependent Variable

Profit/Deficit: the difference between revenue and all expenses (Other two possible performance measures are survival time and firm growth in employment).

Independent Variables

Employment Status: I follow previous research using similar datasets to measure an individual's employment status relying on a work status classification scheme that differentiates a variety of labor force attachments: (1) employment with organizations, (2) unemployment, (3) not in the labor force, and (4) self-employment. An individual is recognized as an employee when his labor force status is employment with organizations. Statistics Sweden recognizes both unincorporated self-employment and incorporated self-employment.[8] Founders of incorporated ventures appeared as employees whereas the incorporated ventures appeared as employers. However, I treated individuals who were founders of incorporated ventures as entrepreneurs, self-employed in incorporated firms. Unlike Nanda and Sørensen (2010) treating employees working for new firms that have less than 3 employees as entrepreneurs, I only define self-employed people as entrepreneurs because the jobs that employees have in newly founded small firms are still wage jobs, which are fundamentally different than founding one's own new business.

[8] The data is based both on the statement of income to be provided to tax authorities for all persons who received remuneration or other benefits from employers and the data on declared income of active trade.

Same Workplace, measured by whether a firm includes at least one pair of self-employed and employee from the same workplace before they join in a new business. It is important to note that new firms make the first hire in different years. It is possible that there will be a time lag between the time when an entrepreneur was working for an establishment and when the employee was working for an establishment, if an employee is hired not in the founding year of a new business, for example, an entrepreneur left an establishment in 1995 to create a new business, he/she hired someone from the same establishment in 1997. More than 80% of new businesses have one employee, so the measure I am using -- whether a firm includes at least one pair of self-employed and employee from the same workplace before they join in a new business – capture the sharing status of entrepreneur(s) and employee(s) for most new businesses.

Similarity of Entrepreneurial founders' and employees' workplaces: is measured by four indicators.

Industry Similarity: this variable is coded based on the 5-digit SIC industry code. There are three industries of my interest: the industry where a former entrepreneur created his/her startup, the industry where the current workplace is established, and the industry where an employee starts his/her new business. I examine the similarity of any pair of the three industries, which is measured by an ordinal variable ranged from 0 to 5, indicating whether the two businesses are in same industry in the 1st, 1-2, 1-3, 1-4, or 1-5 industry code. For example, the extent of similarity of the two industry codes, 50202 and 50203 (50202 Bodywork repair, painting and glazing of motor vehicles, 50203 Installation and repair of electrical motor vehicle equipment) would be 4; and the extent of similarity of the two industry codes 50202 and 50301 (Wholesale of motor vehicle parts and accessories) would be 2.

Similarity of firm size: the difference between the number of employees in an entrepreneur's former workplace and the number of employees in an employee's former workplace.

Similarity of firm age: the time difference between the founding year of an entrepreneur's former workplace and the founding year of employees in an employee's former workplace. Because the time frame of the LISA data are from 1989 onwards, I could not be able to identify firms' founding years when they were founded in 1989 or before. So I also included a variable "founding in 1989 or before" to handle the left-censored variable of similarity of founding year.

Similarity of gender diversity: the difference between the percentage of women employees in an entrepreneur's prior workplace and the percentage of women employees in an employee's prior workplaces.

For all the four similarity variables, I first construct them for each entrepreneur-employee pair. For the three variables, similarity of size, age, gender diversity, their values can be negative or positive. Because I am interested in "similarity" rather than "directional difference", for each similarity variable at team level, I take the average of the absolute values of entrepreneur-employee pairs. For example, if a new firm has an entrepreneur and 2 employee, the similarity of firm size is -5 and 10 for the entrepreneur and the two employees. I then average the absolute values (5+10)/2=7.5 to get a measure for the new firm. The interpretation is that on average employees of this new firm are from established organizations that are about 7 years younger or older than the entrepreneur's workplaces. Entrepreneurs and their employees are from workplaces of similar age when the value for this variable is smaller.

Control Variables

I control for firm-level variables.

Firm-level control variables: founding year of a new business, the number of employees, the percentage of female employees; County fixed effects.

Analytical Strategies

I use a generalized mixed-effect model for a continuous dependent variable to analyze the effects of independent variables on new firms' performance (Mixed-Effects Models). The first-level unit is a firm-year observation and the second-level unit is a firm. Correlated errors are included for each cluster of firm-year observations.

The Linear Mixed Model is a generalization of the linear model and is represented as:

$$Y_i = X_i\beta + Z_i\gamma_i + \varepsilon_i$$

Where X_i and Z_i are fixed and random design matrices, respectively, β is a vector of unknown fixed effects, γ_i is a vector of unknown random effects and ε_i is the unknown random error. I assume that the random effects are normally distributed with

$$E\begin{bmatrix}\gamma \\ \varepsilon\end{bmatrix} = \begin{bmatrix}0 \\ 0\end{bmatrix} \quad Var\begin{bmatrix}\gamma \\ \varepsilon\end{bmatrix} = \begin{bmatrix}G & 0 \\ 0 & R\end{bmatrix}$$

I choose Autoregressive (1) as the covariance structure, $\sigma_{ij} = \sigma^2\rho^{|i-j|}$, $\sigma_{ij} = \sigma^2\begin{bmatrix}1 & \rho & \rho^2 \\ \rho & 1 & \rho \\ \rho^2 & \rho & 1\end{bmatrix}$

,because the AR(1) structure has homogeneous variances and correlations that decline exponentially with distance. In my case this means that the variability in profit/deficit is constant regardless of when I measure it. It also means that two firm-year observations that are right next to each other in time have stronger correlations (depending on the value of ρ) than firm-year observations that are further from each other, for example, a firm's profit in 1995 would be strongly correlated with its profit in 1996 but would be less strongly correlated with its profit in later years.

RESULTS

In the results section, I first describe where new businesses' employees are from, I then present results showing the consequences of entrepreneur and employees' workplaces similarity for new businesses.

Descriptive Results

Even though some scholars have claimed that new businesses create most new jobs, my data show that most new jobs are created by a small proportion of new businesses and the majority of new businesses do not have any employees in their founding year. In Figure 1, I show the percentiles of the number of employees hired by new businesses created in 1995, 1996, or 1997 in Sweden. In the first year, less than one third of new businesses hired employees. Until the 5th year, about half of new businesses do not have any employees. But the trajectories of employment growth shows that some new businesses hire more employees in subsequent years so that about one third of new businesses hire more than 5 employees from the third year.

Among employees of new businesses, about half of them were working in very different industries before they joined in the new businesses. Figure 2 shows the time-dependent patterns of the percentages of employees from the founders' prior workplaces or industries similar to founders' prior workplaces. I first examine whether employees are from the founders' prior workplaces. I then examine the heterogeneity of employees' prior workplaces based on their industries, when employees are not from founders' prior workplaces. The X axis is the similarity of entrepreneurs' and employees' workplaces. In Figure 1, the further on the right of the X axis, the more similar entrepreneurs' and employees' workplaces are. At employee level, 40% of employees hired by new firms in the founding year are from the founders' prior workplaces. However, the number decreases over time as new business mature. For example, the percentage of employees hired from founders' own former workplaces is 28%, 12%, and less than 10% for

the 2nd year, 3rd year, and after 3rd year. Meanwhile, the percentage of employees hired from industries different than the founders' prior industries increases as new firms age.

When employees of new businesses are not from the founders' workplaces, they are mostly from similar organizations. For example, in Figure 3, about 75% of employees worked for organizations that were founded in years close to the founding years of the founders' prior workplaces. Similarly, about 60% of employees are from organizations of similar sizes of the founders' prior workplaces (Figure 4). I also found the similarity of the entrepreneurs' and their employee's prior workplaces in the percentage of women employees, as presented in Figure 5.

Additional descriptive results for all variables of interest are presented in Table 1, comparing new firms that have at least one employee and firms that do not have any employees. The average annual profit for firms that have employees is about $ 23,000, a little less than twice the average annual profit for firms that do not have any employees. Entrepreneurs of firms that have employees worked in industries similar to the current new businesses' industries, compared to entrepreneurs of firms without any employees. Another interesting comparison of the two types of new businesses is that the average age of people in new firms that have employees are 33, but the average age of people in new firms that do not have employees are 44. This age gap may be caused by the fact that employees hired by new firms are younger than entrepreneurs, assuming that entrepreneurs of the two types of firms are at similar ages. This may explain the large percentages of employees hired by new firms from very different industries. It is possible that people tend to work in a variety of industries when they are younger. Finally, the vast majority of new businesses in the sample are in finance & business and education & health industries.

Among firms that have at least one employee, employees' prior industries are more similar to the new businesses' industries than entrepreneurs'. The number of female employees is almost same as the number of male employees in new firms. About half of employees of new firms are women, confirming previous findings that the labor participation rate of Swedish women is quite high, nearly as same as the labor participation rate of their male counterparts.

Model Results

Drawing on a genealogy perspective and learning theories, I have argued that several conditions matter substantially for the extent to which locally optimal solutions can be achieved to build routines in new firms. The first set of conditions concerns the extent to which entrepreneurial founders recruit employees with whom they can collectively build and enact routines. The second set of conditions concerns the extent to which members' workplaces and the new firms are under somewhat homogeneous environments (Becker 2004; Hill and Hwang 2006; Kogut and Zander 1992; Kogut and Zander 1993). In my analysis, I test the effects of the two similarity variables -- the level of industry similarity between entrepreneurs' prior workplace and the new business, and the level of industry similarity between employees' prior workplace and the new business -- on new firms' profit. Results from a linear mixed effects model show that whether employees are from industries similar to the industries of founders' prior workplaces does not affect a new business' performance. However, new firms started by entrepreneurs who worked in similar industries tend to have better profit. The industry similarity variable has a range of 0 to 6. A new firm's profit would increase by $ 1,500 as the level of industry similarity increases by one. Compared to new businesses created by entrepreneurs who entered into a completely different industry to launch startup activities, new businesses created

by entrepreneurs who were employed in the same industries of their new businesses would make $ 90,000 more every year.

In addition to the key variables of interest, Model 1 also shows positive effects of several control variables. For example, with regard to employment size, new firms earn $1,000 more profit as the number of employees increases by one. Compared to employment size, the size of an entrepreneurial team has a much larger effect on new firms' profit. Each addition of an entrepreneur increases a new firm's profit by $ 8,768. The two dummy variables that compare the cohort 1995, 1996 and the cohort 1997 are not significant, showing that new firms created in 1997 earned more or less the same profit as the two younger cohorts.

In Model 2, I add four similarity variables concerning the similarities of entrepreneurs' and employees' prior workplaces to Model 1 to test if entrepreneurs and their employees from similar workplaces are more likely to create new firms with better profit. Among the four similarity variables, the effect of the percentage of women employees is not statistically significant, and the effect of similarity in firm size is statistically but not substantially significant. However, a new firm makes more profit if entrepreneurs and employees' prior workplaces were founded in similar time. In particular, a new firm's profit increases by $615 if the time gap between entrepreneurs' and employees' prior workplaces' founding years increases by one year. This finding suggests that founders and employees who worked for firms of similar ages are more likely to share similar knowledge and information about organizations. Surprisingly, new firms tend to make less profit when entrepreneurs and employees worked in similar industries. In particular, a new firm's profit decreases by $ 1,094 as the level of industry similarity increases by one. I suspect that new firms may benefit from diverse knowledge that founders and employees bring to the new work setting.

In Model 3, I add the two-way interactions of the level of industry similarity between entrepreneurs' prior workplace and the new business and three variables concerning similarities of entrepreneurs' and employees' prior workplaces. I found that the positive effect of entrepreneur's prior industry experience on new firms' performance becomes smaller when the time gap between entrepreneurs' and employees' prior workplaces' founding years is larger. I suspect that when entrepreneurs and employees are from establishments founded in similar time, employees' knowledge about creating new businesses may substitute for the entrepreneurs' and lead to the smaller effects of entrepreneurs' knowledge on the new firms' performance. In other words, a smaller time gap between entrepreneurs' and employees' prior workplaces' founding years leads to an increased redundancy of an employee's and an entrepreneur's knowledge about organizations.

Discussion and Conclusion

In this chapter, I investigate how founders and their recruited employees jointly create new businesses, contingent on the founding context of new businesses. I argue that an important dimension of developing routines and delineating boundaries is manifest in entrepreneurs' selections of employees from their local labor markets (Scott 2008). Once recruited, employees join the founders to create new organizations and exert influences on organizations' structures and performances. Even though entrepreneurs largely follow the blueprints they learned from prior employer organizations to recruit employees, the effects of transferring routines may be contingent on the founding conditions surrounding the new businesses.

I proposed that several conditions matter substantially for the extent to which locally optimal solutions can be achieved to build routines in new firms. The first set of conditions concerns the extent to which entrepreneurial founders recruit employees with whom they can

collectively build and enact routines. I propose that a new business' performance is the best, secondary, and lowest, when founders and employees are from the same prior workplaces, similar workplaces and workplaces that are very different. The second set of conditions concerns the extent to which members' workplaces and the new firms are under somewhat homogeneous environments (Becker 2004; Hill and Hwang 2006; Kogut and Zander 1992; Kogut and Zander 1993). Nascent entrepreneurs would benefit the most when they attempt to start businesses in industries where they already have a substantial depth of experience. Similarly, employees' prior industry experience may also increase new firms' performance.

I found mixed results for the hypotheses. New firms do benefit significantly from large employment size, and new firms started by entrepreneurs who worked in similar industries tend to have better profit. However, whether employees are from same industry does not affect a new business' performance. Furthermore, a new firm makes more profit if entrepreneurs and employees' prior workplaces were founded in similar time. The interaction effects of founders' prior industry experience and the similarities of founders' and employees' workplaces suggest that new firms benefit less from founders' prior industry experience if founders and employees are from employer organizations that were founded in similar time. My analysis provides a finding that has been under theorized in my framework. I have emphasized the importance of founder-employee's share of workplace attributes for building new businesses' routines, but my results suggest that if founders and employees have worked in different industries, a new firm actually has more profit.

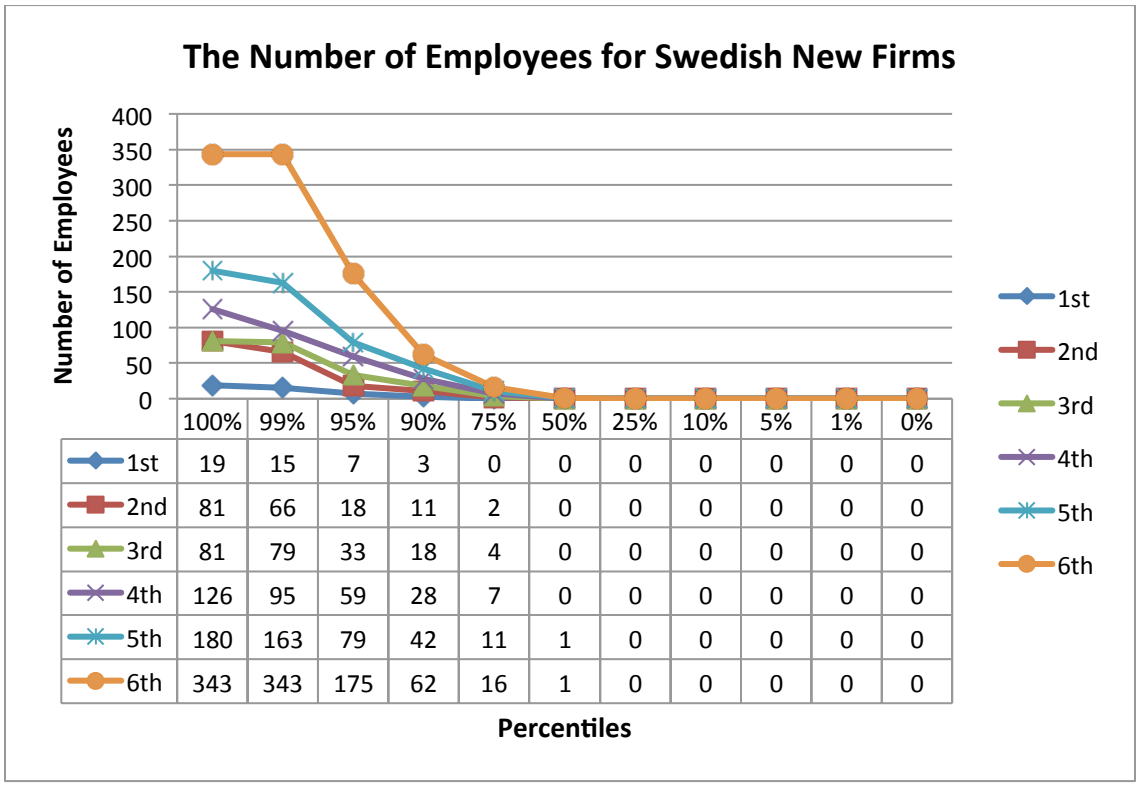
A limitation of this chapter is that some results may be sensitive to the measures I used. New firms have tremendous heterogeneities in performances, the number of employees, and founders and employees' prior industry experiences. Most variables are highly negatively

skewed. Further analysis needs to be done to find which measures fit the models best and the extent to which the results are robust.

Table 1. Descriptive Results of New Firms in Sweden founded in 1995, 1996, or 1997

Variable	Median	Mean	Std	Median	Mean	Std
	Firms Have Employees			Firms Have No		
Profit/Loss (U.S. dollor, 1,000)	13.80	22.95	151.17	11.73	13.15	346.90
Similarity of Entrepreneurs' and						
Percentage of Female Employees	0.00	0.09	0.17	--	--	--
Workplace Size	0.00	2836	9438	--	--	--
Workplace Age	0.00	0.32	1.26	--	--	--
Industry	0.00	0.44	1.22	--	--	--
From Similar Industry						
Entrepreneurs	0.00	0.60	1.41	0.00	0.10	0.59
Employees	0.00	1.63	2.25			
# of Employees having Startup Exp	1.00	1.03	0.90	--	--	--
Workplace Demographics						
# of Female Employees	1.00	0.57	0.50	--	--	--
# of Male Employees	1.00	0.58	0.49	--	--	--
# of Employees	1.00	1.14	0.35	--	--	--
Percent of Female Employees	0.50	0.49	0.46	--	--	--
Avg. Age of People	33.00	34.98	11.53	44.00	44.17	11.74
Number of Entrepreneurs	1.00	1.26	0.73	1.00	1.09	0.39
Industry Type of Employer Firm						
Agriculture & Fishing		3			5	
Manufacture		4			4	
Construction		1			1	
Wholesale		4			3	
Finance & Business		72			64	
Education & Health		11			14	
Other Service		5			9	

Figure 1.



	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%	0%
1st	19	15	7	3	0	0	0	0	0	0	0
2nd	81	66	18	11	2	0	0	0	0	0	0
3rd	81	79	33	18	4	0	0	0	0	0	0
4th	126	95	59	28	7	0	0	0	0	0	0
5th	180	163	79	42	11	1	0	0	0	0	0
6th	343	343	175	62	16	1	0	0	0	0	0

Figure 2.

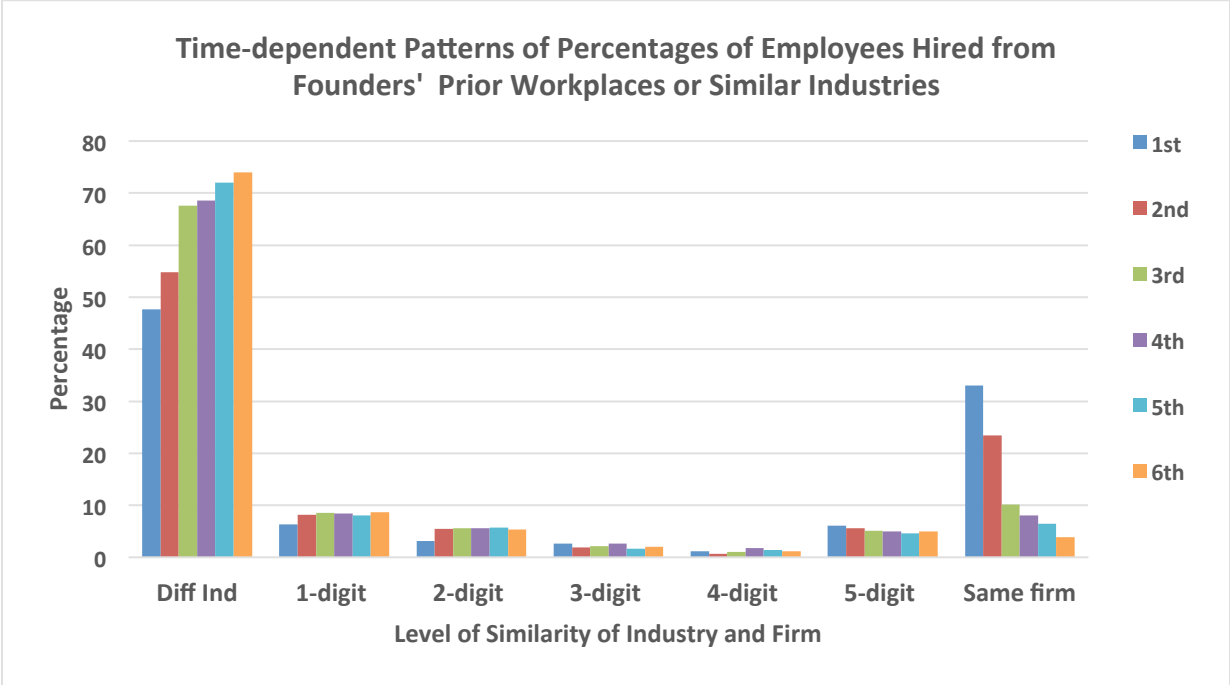


Figure 3.

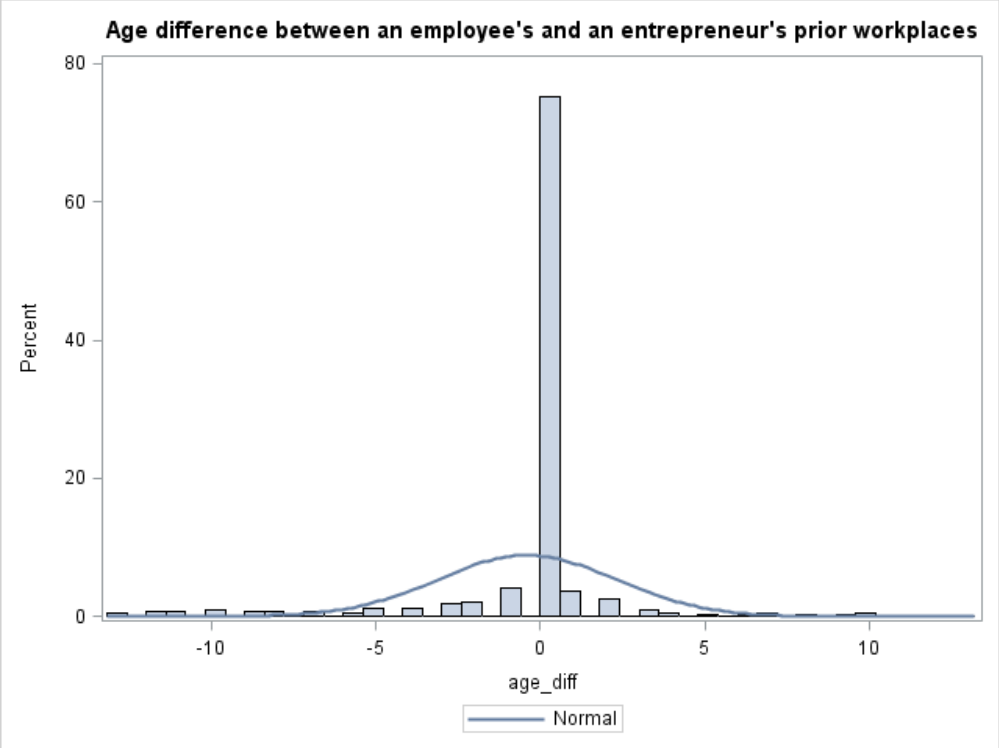


Figure 4.

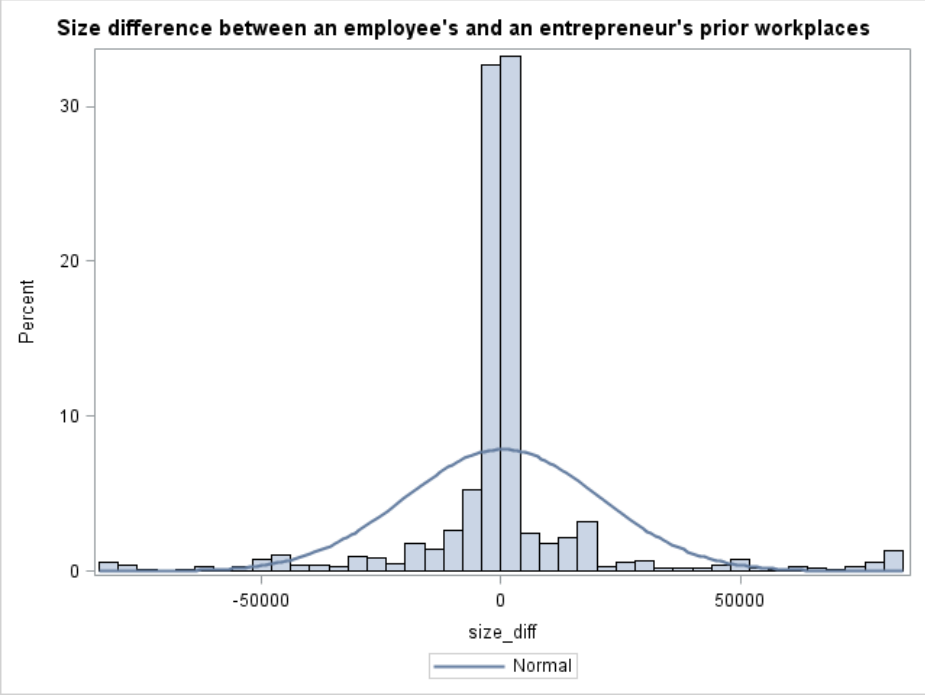


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Figure 5.

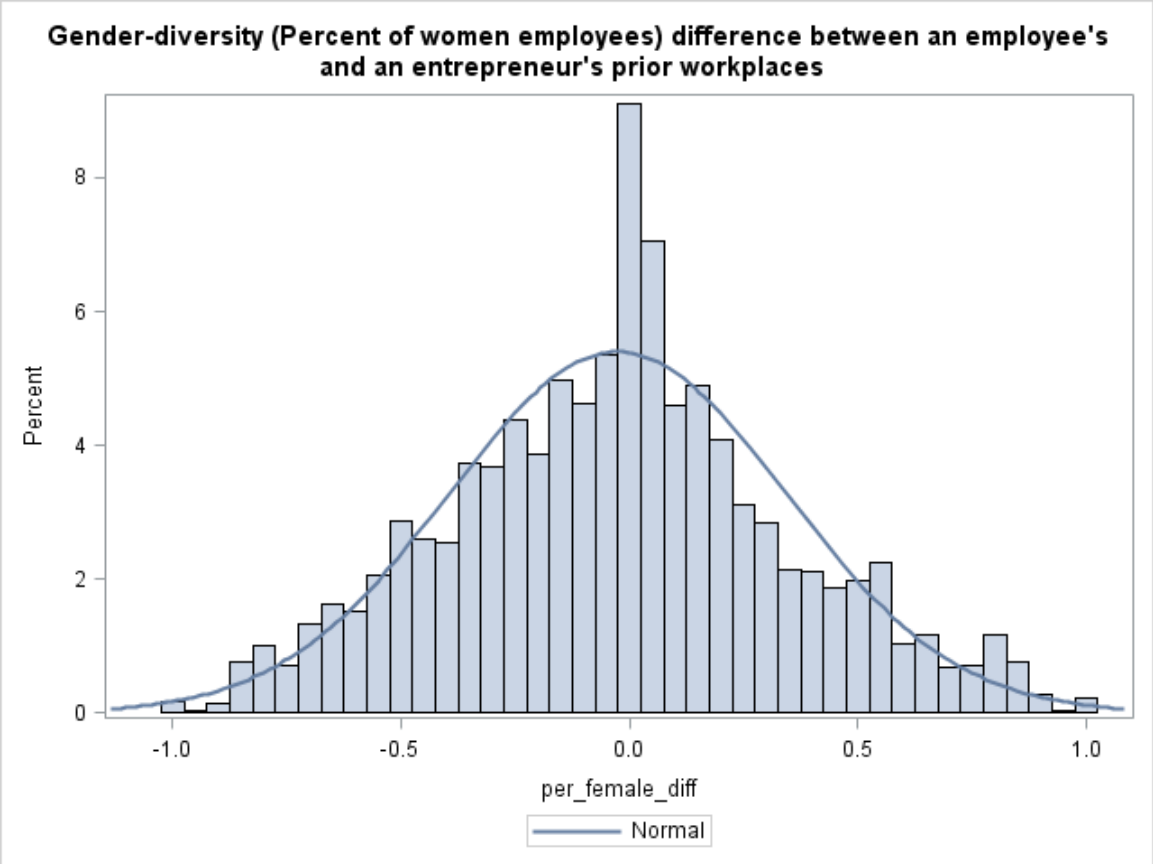
Gender-diversity (Percent of women employees) difference between an employee's and an entrepreneur's prior workplaces
Percent
8
6
4
2
0
-1.0
-0.5
0.0
0.5
1.0
per_female_diff
Normal

Table 2. Results from Mixed Models for New Firms' Profit/Deficit - New Firms in Sweden founded in 1995, 1996, or 1997

	Model 1		Model 2		Model 3	
Effect	**Estimate**	**P**	**Estimate**	**P**	**Estimate**	**P**
Intercept	6.789	<.0001	6.677	<.0001	6.447	<.0001
From Similar Industry	(0.734)		(0.734)		(0.737)	
Entrepreneurs	1.540	<.0001	1.636	<.0001	3.413	<.0001
	(0.161)		(0.165)		(0.543)	
Employees	-0.075	0.5497	0.011	0.9305	0.075	0.5888
	(0.125)		(0.128)		(0.138)	
Similarity of Entrepreneurs' and Employees'						
Percentage of Female Employees			-0.010	0.5869	-0.011	0.5488
			(0.018)		(0.018)	
Workplace Size			0.000	0.0174	0.000	0.0004
			(0.000)		(0.000)	
Workplace Age			0.615	0.0113	0.561	0.0215
			(0.243)		(0.244)	
Industry			-1.094	<.0001	-0.751	0.0201
Interaction of the Simi of Ent's prior ind and			(0.247)		(0.323)	
current ind and the Simi of Ent and Employees'						
Workplace Size					0.000	0.0085
					(0.000)	
Workplace Age					-0.038	0.0014
					(0.012)	
Industry					-0.104	0.1983
					(0.081)	
# of Employees	1.058	0.0006	1.072	0.0012	0.998	0.0029
	(0.308)		(0.332)		(0.335)	
Avg. Age of People	0.028	0.0116	0.030	0.0059	0.037	0.0009
	(0.011)		(0.011)		(0.011)	
Number of Entrepreneurs	8.768	<.0001	8.768	<.0001	8.727	<.0001
Founding Year (Ref= 1997)	(0.356)		(0.356)		(0.356)	
1995	0.088	0.8149	0.085	0.82	0.082	0.8275
	(0.375)		(0.375)		(0.375)	
1996	-0.449	0.2411	-0.447	0.2429	-0.455	0.2346
Industry Type of Employer Firm (Ref= Other	(0.383)		(0.383)		(0.383)	
Construction	-5.292	<.0001	-5.318	<.0001	-5.339	<.0001
	(0.956)		(0.956)		(0.956)	
Wholesale	-3.571	<.0001	-3.587	<.0001	-3.613	<.0001
	(0.623)		(0.623)		(0.623)	
Finance & Business	2.816	<.0001	2.808	<.0001	2.779	<.0001
	(0.394)		(0.394)		(0.394)	
Education & Health	-0.244	0.6019	-0.258	0.581	-0.274	0.5575
	(0.467)		(0.467)		(0.467)	
-2 Res Log Likelihood	627998.2		627993.4		628003.2	
Obs	72140		72140		72140	

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